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ABSTRACT

The Communication Technology and Policy section of the proceedings contains the following 6 selected papers: "Interactivity as a Cognitive Process" (Mark Tremayne and Sharon Dunwoody); "Breaking Up News--An Investment in the Future? Correlations among Hypertext Comfort, User Satisfaction and Perceived Credibility" (Stephanie Berger); "Cybernewsers, Deserters and Includers: An Analysis of Internet News Users and the Effect on Traditional News Media Use" (Mike Conway); "The Pros and Cons of Using a Media Web Site To Publish Subpoenaed Information" (Anthony L. Fargo); "Investigating Dialogic Communication: A Content Analysis of Top Chinese Corporate Web Pages" (Shu Peng); and "Predicting Online Shopping Behavior" (Michael G. Elasmar, Kumiko Aoki, and Kathryn Bennett). (RS)

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Interactivity as a Cognitive Process

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The Web is fast becoming a dominant means of mass communication. Unlike most older media channels, the Web can be configured to allow synergy between sender and receiver. Web users, by following links, using search engines and selecting items from pull-down menus, have the capacity to take a more active role in information consumption. And appropriate software now makes it possible for a user and a site to *collectively* construct meaning. This give-and-take process afforded by the new medium is described by many analysts as "interactivity."

The effects of interactivity on users is the subject of debate. Some see the higher level of user activity leading to greater *involvement* by the user and, subsequently, more significant media effects. Others see the simple actions of Web users as no more significant than television viewers' channel-changing habits or readers' page-turning behavior. In this latter view, interactivity is of no special relevance.

In this exploratory study we propose and test a model of interactive information processing. Specifically, we suggest that characteristics of a user and of a Web site both influence the level of interactivity employed by the user. Interactivity, in turn, will influence information processing strategies. And those strategies will work to influence knowledge acquisition.

Study participants spent time on one of two science Web sites, and their activities were recorded. We also asked participants to "think aloud" while they looked at Web site content as a means of accessing their thought processes. We hoped to reach some conclusions about how Web site features affect an individual's information processing.

Interactivity: Origins and Related Terms

The study of interactivity predates the current fascination with new, so-called "interactive technologies" and the new forms of communication these inventions are enabling. Goffman (1967) studied face-to-face "interaction" and concluded that it is not something to be analyzed at the level of individuals but, rather, involves "the syntactical relations among the acts of different persons mutually present to one another" (p. 2). Others have applied this idea of co-presence to mediated forms of communication and describe what (sometimes) happens there as "interactivity" (Rafaeli, 1988). For Goffman, communication was just one of many things that can occur during an interaction. But Rafaeli sees full interactivity as just one of many things that can occur during communication. Some communication, under this conceptualization, is not interactive. A message received, but not replied to, is one-way and non-interactive. Some response, or feedback, is required to achieve interactivity. Indeed feedback, in the Westley and MacLean (1957) sense of the term, is equated by many scholars with interactivity (Rice, 1988; Newhagen, Cordes & Levy,1995). Newhagen (1997) suggests using the term "cybernetic feedback," which is borrowed from early work in engineering.

Other terms have been used to describe the same, or similar, processes. Bordewijk and van Kaam (1986) proposed several models of "tele-information services." The two that most closely resemble interactivity are their "consultation" and "registration" models. In the former, an information company holds data that is accessed (or consulted) by those who want it; in the latter, individuals possess the data that the information company then seeks out. The authors do not use the word "interactivity," preferring instead the term "feedback."

Ball-Rokeach and Reardon (1988) proposed the term "telelogic" to describe the process of talking or writing while separated geographically. They use both feedback and interactivity as dimensions of telelogic. This framework has been applied to Internet research (Ogan, 1993). Similarly, Steuer (1992) uses interactivity as one dimension of "telepresence," a concept used to characterize the "realness" of virtual realities.

However, interactivity is the term most often used by scholars to describe the two-way nature of most new media technologies (Rafaeli, 1988; Saloman, 1990; Kipper, 1991; Hawkins & Pingree, 1997; Ha & James, 1998; Sunder *et al.*, 1999; McMillan, 1999). Scholars agree that interactivity is a defining component of new media technologies, but they have not yet reached agreement on how it is best conceptualized.

Interactivity: Conceptualizations and measures

Is interactivity just feedback? In mass communication models, feedback is typically illustrated by a dotted line from the receiver to the sender. This implies that the feedback signal is somehow weaker or less important than the primary signal (which moves from sender to receiver). It also implies that it comes after the original message sent by the mass communicator. Further, it comes back not along the same channel as the primary signal but through some other channel. Typical forms of feedback are indirect (circulation or ratings data) or infrequent (letters to the editor, calls to the station, etc.).

Does this model adequately reflect communication that takes place on the Internet – the channel most frequently described as interactive? There, messages sent by individuals often precede those sent by mass communicators (by use of a search engine for example). These messages are not infrequent and are certainly more direct. The signals also travel through the same channel as that used by the mass communicators. So "feedback" in the traditional sense is not an adequate term to describe the style of communication occurring online and elsewhere.

Where does interactivity reside?

Researchers pursuing human-computer interaction have placed emphasis on different components of the exchange. These approaches can be grouped in three categories (McMillan, 1999). One approach is to focus on the individual and to determine if his or her behaviors are interactive and what effects such interactivity might have (Saloman, 1990; Walther, 1994; Hawkins & Pingree, 1997). For example, Salomon (1990) focused on the cognitive effects of computer use on schoolchildren.

Another approach is to focus on characteristics of communication channels and to draw distinctions between new and old media (Rice & Williams, 1984; Rice, 1988; Williams, Rice and Rogers, 1988; Kipper, 1991; Steuer, 1992; Newhagen, 1997). This is a *structural* approach to interactivity. Steuer, for example, devised an interactivity scale with print media on the low end and electronic media such as computer games on the high end.

The third perspective is that offered by Rafaeli (1988). He dismisses the structuralist approach: "Interactivity is not a characteristic of the medium. It is a process-related construct about communication" (Rafaeli & Sudweeks, 1997). He proposes that an exchange of communication is only interactive if each party is responding to the other in a meaningful way. Rafaeli defines interactivity as:

> An expression of the extent that in a given series of communication exchanges, any third (or later) transmission (or message) is related to the degree to which previous exchanges referred to even earlier transmissions (1988, p. 111).

This conceptual definition has been used in a number of studies (Newhagen, Cordes & Levy, 1995; Rafaeli & Sudweeks, 1997; Sundar, Brown & Kalyanaraman, 1999).

These different approaches to studying interactivity produce correspondingly different ways of operationalizing it. A simple diagram illustrates this point (see Figure 1).

[Figure 1 about here]

In human-computer interaction (perhaps the most common type of interactivity currently under study) the "interactivity" in the diagram is depicted by the arrows. These are the messages or signals sent back and forth between the agents. But this is not what most researchers measure. Instead, researchers focus on either the H (studying individual users) or on the C (the *structuralist* approach referred to above) or both.

The focus on users or structures is a practical consideration. To focus on interactivity as a communicative *process* (as Rafaeli advocates) requires access to the messages sent by both (or all) parties. This is easily done where such a record already exists, as it does for online discussion groups (Rafaeli & Sudweeks, 1997). But for much computer-mediated communication such a complete record of messages sent and received is hard to isolate. In many cases information from users can be difficult to obtain for proprietary reasons. So researchers have focused their attention on either end of the communication process using (in most cases) an implicit rather than explicit conceptualization of interactivity.

Our conceptualization for interactivity

Most researchers use the words "two-way" when describing interactive communication. We believe at least two communicators must be involved, each operating as an intentional sender and receiver. This is in line with Rafaeli's conceptualization which requires related messages to be exchanged and built upon by two (or more) parties. Further, reactive (Rafaeli, 1988) communication that involves only one response to a message is not deemed fully interactive because the second party sees no response to his or her message. Such reactive communication actually typifies traditional mass communication where the consumer 's "message" or feedback often consists only of purchasing the paper or subscribing to the cable channel. The exchanged messages must be related and responsive to each other (for example talking "with" rather than "at" someone).

We believe these few criteria define "interactivity." Some researchers also believe that the speed of the exchange is also a dimension of interactivity. While Rafaeli (1997) describes interactivity as "simultaneous" message exchange, there is little reason to believe that asynchronous exchanges (such as e-mail or voice mail) are not interactive. We see this as an attribute of media channels rather than a dimension of interactivity itself.

Interactivity operationalized

This study compares the use of two science-oriented Web sites. The participants in interactivity are, therefore, individual users on one side and the Web sites (and the organizations behind them) on the other. When a user arrives at a Web site and begins reading (or "viewing") an initial message from the Web publisher has been sent and received. The user may then choose to select a link or use a search engine to obtain additional information. This is message-sending activity on the part of the user. If the link or search engine works, then the request will be received by the Web server and a new message sent in response. These three messages (two by the Web site and one by the user) form the necessary trio required for interactivity. By recording each of the interactive instances, an interactivity "score" can be calculated for the session.

Message sending activity by a user (using either a keyboard or mouse) that results in a corresponding (and responsive) change in screen content is, therefore, our operationalization for interactivity.

Web site structure

Rafaeli insists, and we agree, that communication can be more or less interactive and the variable is therefore continuous (1997). While it may be appropriate to describe one medium as more interactive than another, the evidence for this should be found in the proportion of message-sending being done by each party rather than in the structural characteristics of the channels. A medium that appears to support interactive communication may nevertheless be used in much the same way as a unidirectional medium.

The structural characteristics of any medium, however, do place limits on the type of communicative exchanges that are possible there. Steuer (1992) defines interactive media as those that allow users to modify the mediated environment and includes *speed* and *range* among their dimensions. In this view, media that allow users many opportunities (range) to alter content quickly are the most interactive.

This study involves a comparison of two publications presented on the same channel (the World Wide Web), so there will be no significant differences in the speed of interactions. The range, or the amount of interactive options available to users, will be varied in order to examine the impact of range on interactivity.

We operationalize interactive Web site structure as the degree to which users are offered choices that allow them to alter the content they consume. These options include hypertext links, search engines and rollover graphics.

Web Experience

Another precursor to interactive behavior resides in the characteristics of users. Many individual traits could affect a person's interest in interactive communication. Among these, and of special interest for this study, is experience with the medium, in this case the Web. Researchers have identified a link between a person's previous experience with an activity and her current efficacy level toward that behavior (Bandura, 1994). As one's comfort level with a behavior rises, so does the likelihood of engaging in that behavior in the future. We operationalize web experience as the amount of self-reported Web use in a typical week (either for personal or work-related reasons).

Cognition and the Web

Communications researchers studying interactivity have focused either on the structural features of channels allowing two-way discourse or on the actions of those using these structures. So far, relatively little attention has been paid to the cognitive activities of those engaged in interactive behavior. One purpose of this study is to identify the types of cognitive information processing activated during interactive media use.

Cognitive science is certainly a natural fit for study in this area. The field is historically interdisciplinary and uses the computer as a metaphor for understanding the workings of the human mind (Gardner, 1985). Human perceptions, such as vision, have been described by cognitive scientists as interactive processes (Gibson, 1966; Shaw & Bransford, 1977).

The human-computer metaphor has been extended to information processing (Simon & Siklossy, 1972). Under this conceptualization, an individual takes in information through the five senses and stores it in temporary (or "working") memory before transferring some of it to long-term memory and storing it in an associative network, sometimes referred to as "schemata" (Rumelhart, Lindsay & Norman, 1972; Wicks, 1992).

Rehearsal

Individuals employ a number of strategies to embed new information in memory. One such strategy is rehearsal (or repetition of information), also referred to as cognitive maintenance. The use of flash cards to remember multiplication tables is a typical rehearsal strategy. While not necessarily the best means of storing information in memory, this strategy has been demonstrated to improve rote recall (Belmont & Butterfield, 1971).

In the context of information processing during Web use, cognitive rehearsal is simply the reading of material presented with no effort made to connect it to related material (either from prior knowledge or material presented simultaneously).

Elaboration

For retention of more complex information, another strategy is considered especially effective. That strategy – cognitive elaboration – is of particular interest in this study. When an individual encounters a new piece of information, he or she may connect it to related, preexisting knowledge or to other information encountered at the same time. The more connections the individual makes, the more he or she is "elaborating" on it and the more strongly held in memory this new information should be (Anderson & Reder, 1979; Anderson, 1985; Eveland & Dunwoody, 2000). Information that an individual connects to previously held information will become embedded in that person's "associative network," while information that is merely noticed will be held (if at all) in relative isolation. A wide body of literature examines the role of cognitive elaboration on memory and learning. Reviews of some of that work in educational and cognitive psychology (Estes, 1988; Greene, 1992) conclude that processing information elaboratively improves performance on memory post-tests.

Much of the research on cognitive elaboration has focused on learning from text (Baker, 1989; McDaniel & Einsten, 1989; Hamilton, 1997). Now scholars are beginning to apply these techniques to hypertext (or hypermedia) as it appears on the Web (Eveland & Dunwoody, 2000). Material presented in this fashion allows for "interactive reading" (Burbules & Callister, 1996). In this case, "the reader becomes the constructor of his/her unique text" (Lawless & Kulikowich, 1996, p. 386). But how much flexibility does one truly have in a hypertext, or hypermedia, environment? It is up to the document's designer. A nonlinear text, while still finite, can be designed so users with diverse backgrounds can navigate the text according to their individual needs and interests (Fredin, 1997).

If the user, while reading material presented this way, makes meaningful connections between new information and that already held in memory, cognitive elaboration is occurring.

(Dis)Orientation

A drawback to hypermedia presentations that was recognized by several researchers in the 1990s is disorientation (Landow, 1991; Foltz, 1996; Rouet & Levonen, 1996; McDonald & Stevenson, 1996). As users follow links into a hyper-document they can lose track of where they are with respect to the information "space." Disorientation has been demonstrated to have an inhibiting effect on learning because effort spent on orienting behavior draws on limited cognitive resources (Marchionini, 1988; Tripp & Roby, 1990; Mayes, Kibby & Anderson, 1990). This is the so-called "cognitive load" effect.

Previous research on how people process information during hypermedia exposure has revealed orientation to be the most common cognitive activity (Eveland & Dunwoody, 2000). The researchers predicted, however, that this might change over time. As people become more accustomed to using the Web and designers improve the navigability of Web sites, the need for cognitive orientation may diminish.

Learning from media

A great deal of research has focused on learning from media and the influence of structural differences on knowledge acquisition as measured by recall (a review appears in Neuman et al., 1992). Because most media use is not specifically goal-oriented, retention of information is usually low, regardless of medium. Experimental and survey research most often finds print media superior to broadcast media for knowledge acquisition (Furnham & Gunter, 1989; Wicks, 1992; Halpern, 1997). However, this may not stem from structural characteristics of the media. Survey research that measures only "time spent with" rather than *attention* can underestimate knowledge acquisition from television (DeFleur et al., 1992). And there is some evidence of cognitive differences in the way visual information is processed when compared with print that requires a different experimental measure of knowledge acquisition (Shoemaker, Schooler & Danielson, 1989).

Certain characteristics of individuals may affect their performance on memory tests. *Interest* in the subject is a major contributor to recall and comprehension of stories in the media (Berry, 1983; Booth, 1970-71; Woodall, Davis & Sahin, 1983). A related factor is prior knowledge on a subject. A person with an extensive background in a subject is more likely to find a place to connect new information in his "associative memory network" than a person who is new to a topic. Knowledge of current events is a great predictor of recall and comprehension of new stories in the news (Price & Zaller, 1993; Woodall, Davis & Sahin, 1983).

There are a number of ways to quantify knowledge acquisition. The four most common are tests of knowledge using *free recall, cued recall, recognition,* and *comprehension.* For free recall, study participants are asked to remember anything they can from a media use session. Cued recall is used to activate certain areas of knowledge (who, where, etc.) and gives participants a place to begin. Recognition involves closed-ended questions and has been suggested as the most appropriate measure for knowledge gain from broadcast media (Shoemaker, Schooler & Danielson, 1989). Comprehension involves more than the knowledge of independent facts, instead requiring an ability to integrate those facts into a meaningful "system." This study employs a cued recall measure of knowledge acquisition.

Theoretical Model and Hypotheses

The conceptual discussion above leads us to the following model of interactive information processing (Figure 2).

[Figure 2 about here]

The model shown in Figure 2 can be considered in two halves – labeled the *action* phase and the *cognition* phase. The action phase concerns the actual physical actions of users. We propose here that the amount of interactive behavior in which an individual engages is a function of the structural characteristics of the medium (in our case Web sites) and individual user traits (such as Web experience). Specifically, we predict:

H1: A Web site with a greater range of user options will be associated with higher levels of interactivity than one with a lower range of options.

and;

H2: Individuals with high levels of Web use will engage in more interactive behavior than individuals with low levels of Web use.

If the action phase hypotheses are correct, experienced Web users on a complex Web site will exhibit the highest levels of interactive behavior while users with less experience on a site with fewer options will exhibit the lowest levels of interactive behavior. If these hypotheses are confirmed, we will be able to do a between-groups comparison of the effects of *action* on *cognition.*

The cognition phase concerns mental activities – how the user processes information and the effects of that cognitive activity on knowledge gain. We propose here that two types of cognitive effort – elaboration and rehearsal – will promote knowledge acquisition while another, orientation, will not.

Interactive *behavior* can be coupled with any of the cognitive information processing outcomes, but we propose that elaboration is the most likely precursor. This follows from Rafaeli's (1988) conceptualization of interactivity. Under his definition, interactivity is "the extent to which communication reflects back on itself, feeds on and responds to the past" (Newhagen & Rafaeli, 1996, p. 6). This can only happen when an individual relates incoming information to other information and responds to it accordingly. Cognitive elaboration must occur for a user to make a *meaningful* response to a message received. Only in this case can the interactive behavior (i.e. message sending) of the user be characterized as truly interactive. The bold portions of Figure 2 reflect this hypothesis:

H3: Greater interactive behavior should lead to a greater proportion of cognitive elaboration

The think-aloud method we will use to measure cognitive processing allows us to determine exactly when it occurs relative to interactive behavior. Therefore, we can test this hypothesis:

H4: Interactive behavior and cognitive elaboration should be coupled temporally.

A previous study (Eveland & Dunwoody, 2000) suggested that high levels of disorientation might be coupled with user inexperience with the Web, leading us to predict:

H5: Higher levels of Web use will be associated with a reduced need for orientation

Finally, because elaboration has been demonstrated to improve storage of information in memory, it follows that a higher level of truly interactive behavior (message sending coupled with cognitive elaboration) should do the same. Therefore:

H6: Users involved in greater amounts of interactive behavior should have greater recall of Web site content.

Methods

A think aloud protocol was selected as a means of glimpsing information processing strategies of individuals using the Web. Under this methodology, users are instructed to express verbally the thoughts they are having as they navigate through a web site. This method of data collection has been defended most vigorously by Ericsson and Simon (1993) and is used regularly in such fields as education (Calvi, 1997; Hill & Hannafin, 1997) and engineering (Carmel et al., 1992; Darken & Sibert, 1996).

Research on think-aloud protocols shows that the act of verbalizing does not greatly alter the actions or thoughts of the experimental participant (Ericsson & Simon, 1993). As long as the instructions given users are non-directional such as, "Try to think aloud, as if you are alone and talking to yourself," the person's thought processes should be relatively unaffected by talking out loud. During the think-aloud process, participants were not asked to "explain" their behaviors, as this has been found to change subsequent behaviors.

The think-aloud method provides a verbal record of cognitive activity that can subsequently be coded for maintenance, elaboration and orientation behaviors.

Participants

The think aloud procedure produces a large volume of verbal data and coding per respondent and analysis is lengthy. Because of this, a relatively small number of participants – 20 – was selected. Since statistical controls for individual differences that might affect user activity would be impossible for a sample of this size, we controlled for differences using a purposive, rather than random, sample. Participants were drawn from those who responded to advertisements in a medium-sized Midwestern city. They were compensated for their time. An equal number of male and female participants were selected.

To control for participant *interest*, one topic, science, was selected as the content area for study. Participants were asked to rate their interest in various subjects on a ten-point scale. Those who responded with 7 or above on science were placed in a candidate pool from which the final 20 study participants were selected based on the criteria outlined above. The 20 subjects rated their interest in science a mean 8.7, compared to 6.1 for all callers.

Respondents reported an average of 11.9 hours of Web use in a typical week. We selected participants with high Web use (defined here as 15 or more hours per week) and low use (7 or less hours, but not zero). Our resulting low-use group had a 2.7 hour mean and our high-use group a 25.0 mean.

The participants had a minimum of "some college," most had a B.A. degree and a few had earned graduate degrees. Ten participants were in the $20,000 to $40,000 income bracket, nine in the under $20,000 bracket, and one in the $60,000 to $80,000 bracket. None of the participants was currently an undergraduate; four were in graduate or professional degree programs, and the rest were employed. Participants ranged in age from their early 20s to late 40s. The mean age range for each study condition was 35-39.

Conditions

Study participants were randomly assigned (by last digit of home phone numbers) to either the high or low "user options" Web condition. The low-option Web site selected for study was The Why Files (www.whyfiles.org), a Web magazine devoted to science topics currently in the news. At the time of data collection, stories on The Why Files were primarily presented as text, with a small number (typically five or less) of link options per screen. Rarely on this site were users asked to use their keyboard or mouse to provide information that will alter screen content.

The Exploratorium Museum of Science, Art and Human Perception Web site (www.exploratorium.edu) was selected as the high-option condition. Web visitors are often asked to use their keyboard and mouse to affect on-screen changes in content. Stories on the Exploratorium site contain a large number of hypermedia links per screen (typically a dozen or more). Many stories use"interactive modules" that allow readers to key in data that are incorporated in the presentation.

The content of these sites is similar, but certainly not equivalent. Each site, for example, had a story about the solar max phenomenon. There were numerous other areas of content overlap as well.

Procedures

The 20 selected subjects participated individually in a 30-minute Web surfing session during which they were asked to "think aloud." Each individual first practiced the think-aloud technique on a number of warm-up exercises including a visit to the Web site www.howstuffworks.com. Each participant could use either a PC or an iMac computer and either *Netscape* or the *Internet Explorer* Web browser. The computers were connected to the Internet by a high-speed Ethernet line. A VCR was used to record the screen images during the Web browsing exercise and the voice of the participant was captured simultaneously. A clock on the computer screen displayed the time in seconds so that instances of user activity and resulting cognitive behavior could be temporally isolated.

Study participants started at the home page of their assigned Web site. They were allowed to follow any links, including those that took them to other Web sites. Most participants who did this returned without guidance, but one became "lost" and requested assistance in returning to the original Web site. The principal investigator supplied that user with the appropriate Web address and the participant continued the session without further difficulty.

At the conclusion of the sessions, each participant was asked about one "story" or area of the Web site where they spent at least three minutes (mean of 7.5 minutes) during the middle of their session. Study participants were never asked about the last five minutes of their session, as recall should be higher with a short interval between exposure and questioning. For this portion of the study results from four of the 20 participants could not be used because the user either never spent more than three minutes on one section, or spent the entire session on one part of the assigned Web site. The total number of words spoken during recall, as well as total number of words about site content (as opposed to navigation) were used as recall measures.

Operational Definitions: Information Processing

The key variable of interest – information processing style – was determined based upon the comments made by each participant during the think-aloud session. For each 10-second interval the user's comments were coded as either rehearsal, elaboration or orientation.

The "rehearsal" code was selected when study participant merely read from the screen or rephrased the information without the addition of other facts or personal opinions.

"Elaboration" was defined as any comment demonstrating a connection of currently encountered information to prior knowledge, including connections made to other information from this episode of Web use. This also includes any affective evaluation by the user, such as "that's not true," or "I like this topic" as such statements assume prior knowledge or experience by the study participant.

"Orientation" was coded whenever a user made a comment about site navigation, such as "Let's try this and see where it takes us," or "I'm lost," or "now I've figured out where I am."

Coding and Reliability

Every 10-second interval of each participant's 30-minute Web browsing session was coded for Web site (either Why Files, Exploratorium, or other), user activity (keyboard inputting, mouse clicking, other mouse action not including scrolling, or none), information processing (rehearsal, elaboration or orientation), and domain (a comment about site content versus one about site structure or navigation). If more than one category for a variable occurred during the 10-

second interval, the one that occurred for a majority (51 percent) of the interval was considered the proper code. A "mixed" code was used for each variable when multiple behaviors prevented any category from reaching 51 percent.

A reliability test involving the principal investigator and another coder (a paid doctoral student) was conducted on the coding scheme. As the variables are all nominal, Scott's π was used to calculate inter-coder reliability. Reliability for the coding scheme was .83 overall, with individual variables ranging from .75 for information processing, .78 for domain, .85 for user activity and .93 for Web site.

Results

Action Phase

The two Web sites were selected to maximize differences in interactive behavior while minimizing differences in content. The Exploratorium site, with content more elaborately hyper-linked and with more opportunities for user input, was selected on the assumption it would lead to more mouse and keyboard activity than The Why Files site. We also selected research participants with high and low web use on the assumption that their interactive behavior levels would vary accordingly. If these premises were correct we would expect the interactive behavior levels corresponding to those in Table 1 below.

[Table 1 about here]

The results validate these assumptions. Table 2 below shows the percentage of time intervals during which users were engaged in activity that changed screen content.

[Table 2 about here]

The results demonstrate a sizable difference in interactive behavior of participants who spent time on The Why Files site (26% overall) compared to those who used the Exploratorium site (47%). This difference is significant (χ^2=93.0, df=1, p<.001) and confirms the first hypothesis. The more modest difference in interactive behavior for those with high (40%) and low (34%) Web use is also statistically significant (χ^2=8.4, df=1, p<.01) and confirms the second hypothesis. The *action* phase of our proposed model is supported by the data.

Cognition Phase

Hypothesis 3 predicts that higher levels of interactive behavior among users should encourage cognitive elaboration during Web use. Table 3 shows the percentage of comments coded as elaborations for each user group.

[Table 3 about here]

These data exclude time intervals when a participant followed a link to an outside page and those time intervals that could not be coded as either rehearsal, elaboration, or orientation. The proportions are similar to the interactive behavior levels shown in Table 2 with the exception of the low use Why Files group. If our hypothesis had been correct, this cell would contain the smallest elaboration value instead of the second largest. This may be due in part to one participant in that cell whose behavior was very unusual compared to all other study participants (the subject's comments were coded as 82 percent elaborative). Excluding this case from the data as a statistical flier would reduce that subgroup to 40 percent and yield a positive correlation between interactivity and elaboration, however that correlation would be very modest (Pearson's r=.11, n=20).

A post-hoc analysis of the effect of Web site structure and Web experience on cognitive processing is illuminating. Slightly more than half (51%) of the comments made by Exploratorium Web users could be categorized as elaborations compared to 42.5% for The Why Files users. The differences in information processing strategies between the two groups was statistically significant (see Table 4).

[Table 4 about here]

Users of the Exploratorium site spent slightly more time in orientation behavior than those using The Why Files site, a pattern consonant with the Exploratorium's more complex structure, while those on The Why Files spent more time on rehearsal than those using the Exploratorium site.

For Web experience, contrary to expectations, high-use study participants actually engaged in less cognitive elaboration than the low-use group (Table 5 below).

[Table 5 about here]

We offer possible explanations for these contradictory findings in the conclusions that follow.

While an overall increase in elaboration was recorded for users of the more interactive Web site, this cognitive work was not occurring more often *during* interactive behavior, as predicted in our forth hypothesis. An examination of the ten-second time intervals during which interactive behavior occurred reveals a large increase in orientation at those times, perhaps not surprising since this usually involved the traversing of hyperlinks (see Table 6).

[Table 6 about here]

The increased orientation that occurs when users are navigating a site does reduce the other forms of information processing examined here (a cognitive load effect), but elaboration decreases only slightly while rehearsal is almost halved. There is almost a one-to-one correspondence between increased orientation and decreased rehearsal during time intervals involving interactive behavior. This result is the same when we look at the two Web site groups separately (Table 7 below).

[Table 7 about here]

Again we see large increases in orientation during user activity coupled with large decreases in rehearsal and smaller decreases in elaboration. There is no support for the forth hypothesis, but a competing hypothesis, that interactive behavior and cognitive orientation are temporally connected, is suggested by the data.

The fifth hypothesis predicts that more experienced Web users will experience a decreased need for cognitive orientation. An analysis of all time intervals (n=2279) reveals almost no difference between high and low use groups (see Table 5 above). However, further analysis of the data does reveal an interesting distinction between the high and low Web use groups concerning cognitive orientation. While the groups are virtually identical while not engaged in keyboard or mouse activity (orientation accounts for 13 percent of the behaviors of both groups), there is a difference in their orientation behavior during periods of interactive behavior (see Table 8).

[Table 8 about here]

These results, while suggestive of a difference between the high and low use groups, are not statistically significant at the .05 level.

The final hypothesis concerns the recall of information by study participants. Users spent varying amounts of time on the sections of the Web site they were subsequently asked to recall. Since we would expect some correlation between time spent and the amount of information that was later recalled, we have adjusted the data here by dividing it by the number of minutes a user spent on the part of the Web site in question.

As with their Web sessions as a whole, the Exploratorium users had greater interactive behavior levels (2.8 actions per minute) on the targeted recall sections compared to The Why Files group (1.4 actions per minute). This result is statistically significant (t=3.29, p <.01).

The amount of cognitive elaboration on these sections is also higher for the Exploratorium group (3.3 elaboration intervals per minute) compared to The Why Files group (1.9 intervals) at a statistically significant level (t=2.91, p < .01).

As predicted, the total amount recalled is also higher for the Exploratorium group (45.1 words per minute of attention) compared to The Why Files participants (26.2 words) at a significant level ($t=2.04$, $p < .05$). A similar difference is found when we look only at content-specific recall (33.6 versus 18.7 words per minute of attention).

Additional Findings

Our data suggest a substantial decrease in cognitive orientation from a similar study conducted three years earlier (Eveland & Dunwoody, 2000). Our findings indicate a substantial decrease, from nearly 40 percent in 1997 to 22 percent in 2000 (Table 9 below).

[Table 9 about here]

The results are statistically significant. While the two studies use different units of analysis (individual "thoughts" versus 10 second intervals) we do not believe the large differences in the proportions of each information processing category can be explained by that fact.

Conclusions

The data presented here support the *action* phase of the interactive information processing model we proposed, but require a reconsideration of the *cognition* phase. Users of the more complex site did engage in more interactive behavior, demonstrate greater levels of cognitive elaboration, and subsequent recall of content. But a correlation between interactive behavior and elaboration across all 20 participants was not found, nor was a temporal connection found between these variables. There are a number of possible explanations, the first of which goes to study design.

In this quasi-experimental study, we chose to use actual Web sites rather than simulations and allowed participants great freedom in exploring them. This type of experience more closely mirrors actual media use and affords us greater external validity. But the cost is internal validity. The two sites, while similar in content, are certainly not the same. Variables other than interactivity may be responsible for increases in elaboration and recall found for the users of the Exploratorium site.

Higher levels of Web use was found not to promote cognitive elaboration, but, perhaps, to hinder it. This was especially apparent for high-use participants assigned to the less complex Web site (The Why Files). This group recorded the lowest elaboration levels. It may be that, like television channel surfers, high-use Web browsers have a lower *involvement* level with relatively simple content. High-use participants assigned to the more complex site (Exploratorium) recorded the highest elaboration levels.

It's possible that *involvement* or *attention* are intervening variables that need to be accounted for in our model. And it may be the case that what we would term "true interactivity" (interactive behavior coupled with elaboration) and meaningless interactivity ("surfing" or "browsing" behavior not coupled with elaboration) are both occurring. In this case both viewpoints on the value of interactivity could have merit.

As predicted in previous research in this area (Eveland & Dunwoody, 2000), orientation behavior among research participants has declined over time. In both studies, research participants were "average citizens," not college undergraduates. As the general population becomes more accustomed to using the Web, we would expect this trend to continue.

Finally, and most promising for proponents of Web-based information systems, this exploratory study did find evidence of a greater amount of content-specific recall for participants assigned to the more interactive Web site. This result warrants further investigation. A more controlled experiment – one where the content does not vary from participant to participant – would be a logical next step.

References

Anderson, J. (1990). *Cognitive psychology and its implications.* San Francisco: Freeman.

Anderson, J. & Reder, L. (1979). An elaborative processing explanation of depth of processing. In L. Cermak & F. Craik (Eds.), *Levels of processing in human memory.* Hillsdale, NJ: Lawrence Erlbaum.

Baker, L. (1989). Metacognition, comprehension monitoring and the adult reader. *Educational Psychology Review 1*, 3-38.

Ball-Rokeach, S. J. & Reardon, K. (1988). Monologue, dialogue, and telelog. In R. P. Hawkins, J. M. Wiemann, & S. Pingree (Eds.), *Advancing communication science: Merging mass and interpersonal processes.* Newbury Park, Calif: Sage.

Bandura, A. (1994). Social cognitive theory of mass communication. In J. Bryant & D. Zillmann (Eds.), *Media effects: Advances in theory and research.* Hillsdale, NJ: Lawrence Erlbaum Associates, 61-90.

Belmont, J. M. & Butterfield, E. C. (1971). Learning strategies as determinants of Memory deficiencies. *Cognitive Psychology 2*, 411-420.

Berry, C. (1983). Learning from television news: A critique of the research. *Journal of Broadcasting, 27*, 359-370.

Booth, A. (1970-71). The recall of news items. *Public Opinion Quarterly, 34*, 604-610.

Bordewijk, J. L. & van Kaam, B. (1986). Towards a new classification of tele-information services. *Intermedia* 14(1), 16-21.

Burbules, N. & Callister, T. (1996). Knowledge at the crossroads: Some alternative futures of hypertext learning environments. *Educational Theory* (winter).

Calvi, L. (1997). Navigation and disorientation: A case study. *Journal of Educational Multimedia and Hypermedia 6*, 305-320.

Carmel, E., Crawford, S. & Chen, H. (1992). Browsing in hypertext: A cognitive study. *IEEE Transactions on Systems, Man, and Cybernetics 22*, 865-884.

Darken, R. P. & Sibert, J. L. (1996). Navigating large virtual spaces. *International Journal of Human-Computer Interaction, 8*(1), 49-71.

DeFleur, M.L., Davenport, L., Cronin, M., & DeFleur M. (1992). Audience recall of news stories presented by newspaper, computer, television and radio. *Journalism Quarterly, 69,* 1010-1022.

Ericsson, K. A. & Simon, H. A. (1993). *Protocol analysis: Verbal reports as data.* Cambridge, MA: MIT Press.

Estes, W. K. (1988). Human learning and memory. In R.C. Atkinson, R.J. Herrnstein, G. Lindzey & R.D. Luce (Eds.), *Stevens' handbook of experimental psychology.* New York: John Wiley & Sons.

Eveland, W. P. & Dunwoody, S. (2000). Examining Information Processing on the World Wide Web Using Think Aloud Protocols. *Media Psychology, 2,* 219-244.

Foltz, P. (1996). Comprehension, coherence, and strategies in hypertext and linear text. . In J-F Rouet, J. Levonen, A. Dillon & R. J. Spiro (Eds.), *Hypertext and cognition.* Mahwah, NJ: Lawrence Erlbaum.

Fredin, E. (1997). Rethinking the news story for the Internet: Hyperstory prototypes and a model of the user. *Journalism and Mass Communication Monographs 163.*

Furnham, A. & Gunter, B. (1989). The primacy of print: Immediate cued recall of news as a function of the channel of communication. *Journal of General Psychology, 116,* 305-310.

Gardner, H. (1995). *The mind's new science.* New York: Basic Books.

Gibson, J. J. (1966). *The senses considered as perceptual systems.* Boston: Houghton Mifflin.

Goffman, E. (1967). *Interaction Ritual: Essays on face-to-face behavior.* Chicago: Aldine.

Greene, R. L. (1992). *Human memory: Paradigms and paradoxes.* Hillsdale, NJ: Lawrence Erlbaum.

Greenwald, A.G. & Leavitt, C. (1984). Audience involvement in advertising: Four levels. *Journal of Consumer Research, 11,* 581-592.

Ha, L. & James, E. L. (1998). Interactivity reexamined: A baseline analysis of early business web sites. *Journal of Broadcasting and Electronic Media 42*(4), 457-474.

Halpern, D. H. (1997). *The impact of different operationalizations of the media on political knowledge and learning: A meta-analytic review.* Paper presented at the annual meeting of the International Communication Association, Montreal, May.

Hamilton, R. J. (1997). Effects of three types of elaboration on learning concepts from text. *Contemporary Educational Psychology 22*, 299-318.

Hawkins, R. P. & Pingree, S. (1997). *Measuring time frames of communication behaviors in computer use.* Paper presented to the International Communication Association, Montreal, May.

Hill, J. R. & Hannafin, M. J. (1997). Cognitive strategies and learning from the World Wide Web. *Educational Technology Research & Development*, *45*(4), 37-64.

Kipper, P. (1991). The Computer Television marriage. *Television Quarterly*, 25(3), 13-19.

Landow, G. (1991). The status of the navigation problem. In R. Furuta & D. Stotts, (Eds.), *Proceedings of the third ACM conference on hypertext.* New York: ACM Press.

Lawless, K. & Kulikowich (1996). Understanding hypertext navigation through cluster analysis. *Journal of Educational Computing Research 14*(4), 385-399.

Marchionini, G. (1988). Hypermedia and learning: Freedom and chaos. *Educational Technology*, 8-12.

Mayes, T., Kibby, M. & Anderson, T. (1990). Learning about learning from hypertext. In D. H. Jonassen & H. Mandl (Eds.), *Designing hypermedia for learning.* New York: Springer-Verlag.

McDaniel, M. & Einstein, G. (1989). Material appropriate processing: A contextualist approach to reading and study strategies. *Educational Psychology Review 1*,113-146.

McDonald, S. & Stevenson, R. J. (1996). Disorientation in hypertext: The effects of three text structures on navigation performance. *Applied Ergonomics 27*(1), 61-68.

McMillan, S. (1999). Health communication and the Internet: Relation between interactive characteristics of the medium and site creators, content and purpose. *Health Communication 11*(4), 375-390.

Neuman, W. R., Just, M. R. & Crigler, A. N. (1992). *Common knowledge: News and the construction of political meaning* (chapters 5 & 6: Media matter; Learning from news). Chicago: University of Chicago Press, 78-109.

Newhagen, J., Cordes J., & Levy, M. (1995). Nightly@nbc.com: Audience scope and the perception of interactivity in viewer mail on the internet. *Journal of Communication, 45*(3), 164-175.

Newhagen, J. & Rafaeli, S. (1996). Why communication researchers should study the Internet: A dialogue. *Journal of Communication 46,* 4-13.

Newhagen, J. (1997). The role of feedback in the assessment of news. *Information Processing & Management 33*(5), 583-594.

Ogan, C. (1993). Listserver communication during the Gulf War: What kind of medium is the electronic bulletin board? *Journal of Broadcasting and Electronic Media 37,*177-196.

Price, V. & Zaller, J. (1993). Who gets the news? Alternative measures of news reception and their implications for research. *Public Opinion Quarterly, 57,* 133-164.

Rafaeli, S. (1988). Interactivity: From new media to communication. In R. P. Hawkins, J. M. Wiemann & S. Pingree (Eds.), *Advancing communication science: Merging mass and interpersonal processes.* Newbury Park, Calif: Sage Publications.

Rafaeli, S. & Sudweeks, F. (1997). Networked interactivity. *Journal of Computer-Mediated Communication 2*(4). http://www.asuc.org/jcmc/vol2/issue4/rafaeli.sudweeks.html

Rice, R. (1988). Issues and concepts in research on computer-mediated communication systems. *Communication Yearbook 12,* 436-476.

Rice, R. E. & Williams, F. (1984). Theories old and new: The study of new media. In R. E. Rice (Ed.), *The new media: Communication, research, and technology.* Beverly Hills, CA: Sage, 55-80.

Rouet, J-F & Levonen, J. (1996). Studying and learning with hypertext: Empirical studies and their implications. In J-F Rouet, J. Levonen, A. Dillon & R. J. Spiro (Eds.), *Hypertext and cognition.* Mahwah, NJ: Lawrence Erlbaum.

Rumelhart, D. E., Lindsay, P. H. & Norman, D. A. (1972). A process model for long-term memory. In E. Tulving & W. Donaldson (Eds.), *Organization of memory.* New York: Academic Press.

Saloman, G. (1990). Cognitive effects with and of computer technology. *Communication Research 17*(1), 26-44.

Shaw, R. E. & J. Bransford (1978). *Perceiving, acting and knowing.* Hillsdale, NJ: Lawrence Erlbaum.

Shoemaker, P., Schooler, C., & Danielson, W.A. (1989). Involvement with the media: Recall versus recognition of election information. *Communication Research, 16,* 78-103.

Simon, H. E. & L Siklossy (1972). *Representations and meaning: Experiments with Information processing systems.* Englewood Cliffs, NJ: Prentice-Hall.

Steuer, J. (1992). Defining virtual reality: Dimensions determining telepresence. *Journal of Communication, 42,* 73-93.

Sundar, S. S., Brown, J. & Kalyanaraman, S. (1999). *Reactivity vs. interactivity: Impression formation effects of message contingency in political web sites.* Paper presented to the Communication and Technology Division at the International Communication Association, San Francisco, May.

Tripp. S. D. & Roby, W. (1990). Orientation and disorientation in a hypertext lexicon. *Journal of Computer-Based Instruction 17*(4), 120-124.

Walther, J. B. (1994). Anticipated ongoing interaction versus channel effects on relational communication in computer-mediated interaction. *Human Communication Research, 20,* 473-501.

Westley, B. H. & McLean, M. (1957). A conceptual model for communication research. *Journalism Quarterly* 34, 31-38.

Wicks, R. H. (1992). Schema theory and measurem,ent in mass communication research: Theoretical and methodological issues in news information processing. In S. A. Deetz (Ed.), *Communication Yearbook 15.* Newbury Park: Sage.

Williams, F., Rice, R. E., & Rogers, E. M. (1988). *Research methods and the new media.* New York: Free Press.

Woodall, W.G., Davis, D.K. & Sahin, H. (1983). From the boob tube to the black box: Television news comprehension from an information processing perspective. *Journal of Broadcasting, 27,* 1-23.

Figure 1
A typical interactive process

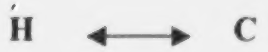

Figure 2
Interactive Information Processing Model

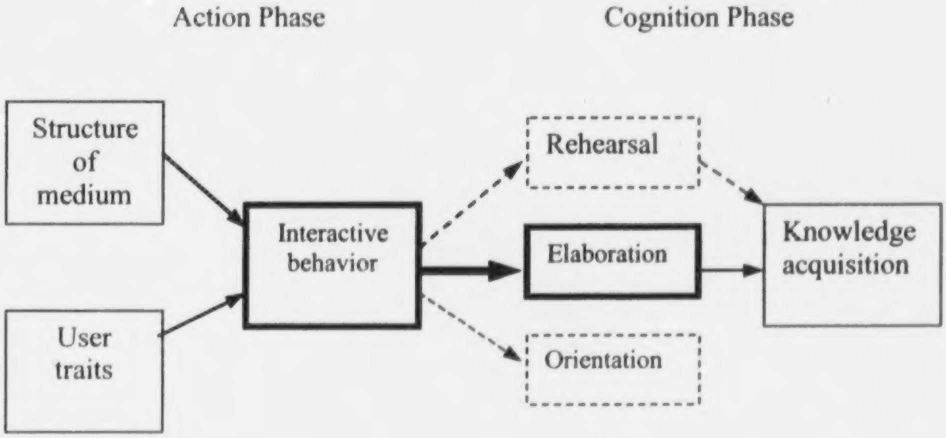
Action Phase
Cognition Phase
Structure of medium
User traits
Interactive behavior
Rehearsal
Elaboration
Orientation
Knowledge acquisition

Table 1
Predicted Interactive Behavior Levels

	Exploratorium	**Why Files**
High Web use	Highest	Middle
Low Web use	Middle	Lowest

Table 2
Interactive Behavior Levels

	Exploratorium	**Why Files**
High Web use	51%	28%
Low Web use	43%	24%

Table 3
Elaboration levels

	Exploratorium	**Why Files**
High Web use	54%	35%
Low Web use	47%	48%

Table 4
Information Processing by Web Site

	Exploratorium	*Why Files*
Rehearsal	26%	39%
Elaboration	51%	42.5%
Orientation	23%	18.5%
	100%	100%
	(n=1016)	(n=1263)

χ^2=43.7, df=2, p<.001

Table 5
Information Processing by Web Use

	High Use	Low Use
Rehearsal	38%	29%
Elaboration	42%	50%
Orientation	20%	21%
	100%	100%
	(n=1010)	(n=1269)

χ^2=20.5, df=2, p<.001

Table 6
Information Processing by Interactive Behavior

	Activity	*Non-Activity*
Rehearsal	19%	37%
Elaboration	45%	50%
Orientation	36%	13%
	100%	100%
	(n=992)	(n=1741)

$\chi^2=213.5$, df=2, $p<.001$

Table 7
Information Processing by Web Site by Interactive Behavior

	Exploratorium			WhyFiles	
	Activity	*Non-Activity*		*Activity*	*Non-Activity*
Rehearsal	21	30	Rehearsal	21	45
Elaboration	48	53	Elaboration	36	45
Orientation	31	17	Orientation	42	10

Table 8
Information Processing during Interactive Behavior by Web Use

	High Use	Low Use
Rehearsal	25%	19%
Elaboration	42%	43%
Orientation	33%	38%
	100%	100%
	(n=384)	(n=409)

χ^2=5.0, df=2, p=.08

Table 9
Information Processing by Year

	1997	**2000**
Rehearsal	23%	30%
Elaboration (including evaluations)	38%	48%
Orientation	39%	22%
	100% (n=2790)	100% (n=2733)

χ^2=191, df=2, p<.001

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Breaking Up News--An Investment in the Future?
Correlations among hypertext comfort, user satisfaction and perceived credibility

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Breaking Up News--An Investment in the Future?
Correlations among hypertext comfort, user satisfaction and perceived credibility

Introduction

Since newspapers went online via the World Wide Web in the early 1990s, most online newspapers simply have provided electronic copies of printed news (Deuze, 2001; Gubman & Greer, 1997; Harper, 1996; Martin, 1998; Rich; 1997). Perhaps burdened by efforts to add multimedia and interactive services to their Web sites, online news staffs have not experimented actively with presenting text in nonlinear formats that make it possible for users to navigate stories by association, choosing reading paths most interesting to them or most relevant to their information needs. Tremayne (2000) found that "if there is a general trend toward the greater use of nonlinear storytelling, it is most apparent at the broadcast company Web sites" (p. 19). If nonlinear formats prove more satisfying to online news consumers in the long run, the newspaper industry might regret not having experimented more with nonlinear formats--especially if newspaper readers have turned instead to broadcast news sites.

Only recently have communication scholars (Huesca et al., 1999; Mensing et al., 1998; Vargo et al., 2000) started to explore the viability of hypertext for online newspaper journalism. A considerable amount of research on Web use (Morkes & Nielsen, 1997; Spool, 1999; Stanford & Poynter, 2000) has found that users focus on text over graphics. This finding suggests that it is crucial to consider questions about the effectiveness of hypertext for delivering news in text form. User focus on text might be advantageous for online newspapers: Notwithstanding the importance of photojournalism to newspaper journalism, the bulk of newspaper content *is* text.

This paper aims to offer a basis for judging how worthwhile it might be for journalists to try out different story formats. It does so through exploring the degree to which users' comfort with hypertext correlates with user satisfaction, perceived story credibility, recall, accuracy, and the amount of a story users read. The data come from a study (Berger, 2001) that tested and compared the effects of two story formats (one linear and one nonlinear) on these five variables.

Literature Review

The literature on online journalism suggests that hypertextuality is an essential characteristic of online journalism (Deuze, 2001). Yet, few studies address the role that hypertext can play in delivering news online effectively. Hypertext is information presented as linked network of brief self-sufficient text blocks or reading units that computer users may navigate in a nonlinear fashion (Keep et al., 1995; Landow, 1992). The network of texts offers users multiple paths through it and therefore multiple experiences of information (Guay, 1995). Often, hypertext is combined with multimedia components to form hypermedia. This study benefited from the insights provided by some literature and research on hypermedia (Berry, 1999; Fredin, 1997; Tremayne, 1999, 2000), but its focus is hypertext.

Bush (1945) was one of the first researchers to conceive of an automated nonlinear text system similar to current implementations of hypertext. It was not until the 1960s that Nelson and Engelbart designed and created computer systems that implemented some of Bush's notions of linked texts (Landow and Delany, 1990). Nelson (1990) has argued that hypertext improves the representation of thought since it can embody all the interconnections an author, or many authors, can think of. Hypertext enhances the user's experience of those interconnections because of the immediacy with which linked texts can be called into view.

The order in which authors present information in hypertexts is most often referred to as "nonlinear" or "multilinear."[1] The nonlinear order of hypertext contrasts sharply with the linear order of printed texts (Bolter, 1991; Pang, 1998). For example: A typical newspaper article is a linear path of text, offering one pathway paved by the journalist (or journalists). Although readers may read the article by skipping along the path in a different order than the one already paved, they still must move along the established path when trying to locate information they find interesting. The path remains fixed.

Most often, newspaper articles appear in the "inverted pyramid" narrative format (Fitzgerald, 1996) commonly taught in journalism schools. The narrative begins with the conclusion and gradually offers detail and background information. Readers who enter at the fixed entry point (the top) can stop at any point and still come away from the article with the most important information (as defined by the journalist). However, no matter where readers enter the narrative, they cannot affect the fixity of the printed form.

In contrast to paragraphs or story sections in a linear narrative, screen-based hypertext pages are not bound in a single sequence. Nielsen (2000) has argued that hypertext should not be used to present long, detailed articles in linear fashion because in-depth background information or information of interest to a subset of readers can be relegated to secondary pages. This ability to relegate background or additional information to subsidiary pages changes the authoring process.

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[1] While the author of this paper feels that "multilinear" is a more accurate term for describing the order of hypertext, "nonlinear" is used throughout this paper in order to communicate a clear contrast between the two treatment groups (linear vs. nonlinear) in the experiment.

With hypertext, authoring is no longer the arrangement of words, sentences, and paragraphs. It is now the design of a document (Conklin, 1989). Authorship in electronic media is "procedural," meaning that authors write "the rules by which the texts appear as well as the texts themselves" (Murray, 1997, p. 152). The process of authoring a hypertext includes writing multiple story components and linking them together into a structure that offers users multiple ways to access all components. The journalist decides how story components should relate to one another and links accordingly. The structure that emerges preserves user agency[2]: the power of users to choose their own paths through a story and be rewarded by an appropriate and satisfying response.[3]

Hypertext has been assumed to be more compatible with online media than traditional narrative forms (Bolter, 1991; Fredin, 1997; Murray, 1997; Nielsen, 1995), such as the inverted pyramid (Huesca et al., 1999). Fredin (1997) suggested that *hyperstories* (stories in hypertext or hypermedia format) shift the space where journalistic standards will be manifest: Linear narrative traditionally has been judged in terms of its fairness, balance, objectivity, accuracy, and completeness; with hyperstories, these standards appear in "*labeled links between files*" (p. 22). Likewise, Fitzgerald (1996) noted that hypertext does not change the essentials of journalism: However, it does alter the basic format of newspaper journalism (the inverted pyramid). Fitzgerald's article raised the question of whether the inverted pyramid would remain the dominant model and explored two possible online story structures: the "*matryoska*" and "serial storytelling" (p. 72).

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[2] See also Murray (1997).

[3] See McAdams and Berger (2001) for an in-depth description of the processes involved in authoring hypertexts.

Despite further discussion of innovative format concepts in the trade press (Dube, 2000; Johnson, 2001; Meyer, 1996; Scanlan, 2000; South, 1999), online newspaper journalists have not experimented extensively with new narrative designs that hypertext makes possible (Outing, 2000). Studies of online newspaper content (Gubman & Greer, 1997; Harper, 1996; Martin, 1998) found that online newspapers historically have offered little more than an electronic version of the print product. More recent studies of Web use (Morkes & Nielsen, 1997; Spool, 1999; Stanford & Poynter, 2000) have suggested that print design principles plainly *do not* translate to the Web: Findings showed that users entering a Web site focused on text earlier and more often than on photos or graphics. Academic researchers and trade-press writers alike (Lowrey, 1999; Martin, 1998; Palser, 2000; Rich, 1997) have suggested that the time has come for online newspaper publishing to challenge its print orientation.

The long-term viability of online news could depend on whether online services offer users a different experience than that provided by print (Chyi & Lasorsa, 1999; Henderson & Fernback, 1998). Beyond what has been suggested, online newspapers would compete effectively with the print products not because they offered different content but because *the presentation* of news content would meet the demands of the medium and users would find the online experience of the content satisfying and credible. Because the Internet is a medium that is driven by users who focus on text, more promising solutions may lie in adopting nonlinear hypertext formats similar to the prototypes proposed by Fredin (1997).

Of all the reasons why it has been recommended that online editors challenge print orientations, the most urgent ones concern user satisfaction. Vargo et al. (2000) observed that newspapers have rushed to incorporate a range of interactive services instead of trying to find out "what readers really want in an electronic newspaper" (p. 40). The lack of understanding what formats effectively satisfy users is probably of little consequence now: Today's Web users are accustomed to reading the linear presentations offered on most newspaper sites. This may change, however, when the next generation takes hypertext and navigation by association for granted as Murray (1997) has suggested the next generation will. In this context, understanding the extent to which comfort with hypertext might correlate with user satisfaction and perceived story credibility (regardless of format) becomes crucial. The industry probably will not rush to allocate resources for creating nonlinear hypertexts (Huesca, 2000) until relationships between hypertext comfort and user responses to online articles are better understood.

User Satisfaction. Some of the studies that analyze user response to online news presentation have provided insight into user satisfaction. Mueller and Kamerer (1995) examined the correlates of satisfaction with and preferences for electronic newspapers. Findings showed that media use correlated positively with satisfaction variables. Huesca et al. (1999) used a combined quantitative-qualitative approach to explore user responses to linear and nonlinear hypertext news stories. Findings showed varying levels of satisfaction for both formats. The findings, however, are based on Sense-Making interviews; a quantitative study might find less variance.

Perceived story credibility. Several studies have examined perceived credibility of online news stories and sources. Online media sources have been rated more credible than their traditional versions (Johnson & Kaye, 1998; Pew Research, 1996), which is good news for online news. Sundar (1998) found that source attribution significantly enhances the perceived credibility of online news stories. Sundar (1999) also found that credibility is a key variable underlying users' perceptions of online news. Yet, how format might affect perceived credibility has not been established. Participants interviewed in the study by Huesca et al. (1999) were evenly divided regarding which format (linear or nonlinear) seemed more credible. It has been suggested that online journalists can establish credibility effectively by taking advantage of hypertext links (Deuze, 1998). However, credibility probably would not be established if most users were not comfortable clicking links.

Research Hypotheses

H1--Regardless of treatment format, participants' hypertext comfort scores will be significantly and positively related to their scores on all dependent measures.

This hypothesis is based on the expectation that participants who feel comfortable with hypertext will know how to navigate or scroll to read the article; it is further assumed that their comfort will cause them to read more of the story, to attribute a high level of credibility to the story, and to experience a high level of user satisfaction. It is expected that they will be less distracted mentally by navigating or scrolling than users who feel less comfortable with hypertext; thus, hypertext comfort would increase both their capacity to recall information and their ability to recall information accurately.

H2--Regardless of treatment format, participants' perceived story credibility scores will be significantly and positively related to their user satisfaction scores.

This hypothesis is based in part on the findings of past research, cited in Johnson and Kaye (1998), that people are less likely to pay attention to media they do not perceive as credible. It is proposed that a high credibility rating will indicate that the participants will have paid a high level of attention to the article and will have felt highly satisfied with their experience.

H3--Participants who use the nonlinear treatment (hypertext) will have significantly higher user satisfaction scores than participants who use the linear treatment (scrolling).

This hypothesis is based on the concept of nonlinear hypertext as an emotional medium. Fredin (1997) and Murray (1997) have argued that nonlinear hypertext, if constructed and used well, can provide a strong sense of emotional satisfaction. It is assumed that this suggested sense of emotional satisfaction will play out in higher user satisfaction scores for participants who receive the nonlinear treatment.

Methodology

Sample. The 135 participants in this study were enrolled in an undergraduate advertising course taught by a faculty member of the University of Florida College of Journalism and Communications; 125 produced usable questionnaires. Four questionnaire sets (3 nonlinear treatment; 1 linear treatment) were dropped because the participants failed to answer the manipulation-check question correctly. Four questionnaire sets were dropped because participants reported a reading time less than 10 minutes--less than half the average time spent reading (20.27 minutes), suggesting that these participants did not follow instructions. Two questionnaire sets were dropped because participants reported having known about the event described in the article before the experimental session.

Advertising students were recruited in an attempt to avoid any effects that extended exposure to news narratives (expected of journalism students) might have on the dependent variables. Students were encouraged by their professor to attend one of 10 sessions that were held on consecutive weekdays from January 29 through February 7, 2001, in the college's computer labs. Students who participated in the experiment received extra credit for their advertising course.

Procedures. As participants came into the lab for the experiment, they were systematically assigned to the linear treatment or to the nonlinear treatment as follows: The first participant to arrive received the linear treatment; the second participant to arrive received the nonlinear treatment; the third participant received the linear treatment, etc. Participants in different groups sat with their backs to one another.[4]

Participants were asked on the instruction sheet to record the times (using the Microsoft Windows system clock available on the computer screen) they started and finished reading in the blanks provided on that sheet. Participants were instructed to open Microsoft Internet Explorer (the treatment was set as the default page) and then to read the entire story or to read for at least 15 minutes. They were asked to raise their hands when they had finished reading: They then received Questionnaire 1, which measured recall. Participants were asked to raise their hands when they had finished Questionnaire 1. They then received Questionnaire 2, which measured the remaining variables. After completing Questionnaire 2, students were debriefed with a note that urged them not to share any information about the experiment with their peers who possibly would be attending subsequent sessions.

Stimulus material. Two treatments--a linear treatment and a nonlinear treatment--were developed on an IBM-compatible PC using Notepad and hypertext markup language

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[4] Due to constraints in the lab schedule, sessions were held in three different labs depending on the day. The labs shared the same basic floor plan and all had IBM-compatible personal computers, but the monitors differed. Sixty-five participants viewed the treatments on 17-inch monitors and 50 participants viewed the treatments on 21-inch monitors. Analysis of variance in Statistical Package for the Social Sciences (SPSS) showed that monitor size did not have any significant effects on the dependent variables.

(HTML).[5] Both contained an identical news article from the online edition of the daily newspaper The News-Press, Fort Myers, Florida.[6] Because the article came from a Florida newspaper and the experiment was conducted in Florida, the writer's name was changed (to a gender-neutral name) and the name of the newspaper was changed to a generic name to minimize effects for any students who possibly knew the writer and/or were familiar with the newspaper. The article was chosen for four reasons: First, the storyline was thought to have high appeal for the participants. Second, the story was not one that the participants were likely to have been exposed to already because the event reported was neither a local (northern central Florida) nor a national news event.[7] Third, although the journalist's narrative was almost entirely sequential, the story was written in parts. The structure of the 4,234-word story could be broken down into 20 "components" as defined in McAdams and Berger (2001). The story also included brief profiles of its 18 main "characters"; the profiles could be formatted in an HTML table and counted as a 21st component. Fourth, the story had an essential quality of a multiform story as described by Murray (1997): It offered multiple perspectives on the same event. Thus, the story appeared to represent one of the story types that would be especially appropriate for the online medium. The format definitions used in the experiment were consistent with the definitions used in the study by Huesca et al. (1999) of readers' responses to competing narrative forms for online news stories. In the design of both treatments, the researcher attempted to follow Web design guidelines in Web Usability: The Practice of Simplicity (Nielsen, 2000).

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[5] The full treatments are available online: <http://stephanie.berger.net/thesis/treatments/>.

[6] The article ran in both the print and online editions in September 2000. See the newspaper's online version: <http://www.news-press.com/kilimanjaro/kilimain.html>. Permission to use the story was given by News-Press.com Online Editor Jeff Roslow.

[7] Whether participants had known of or had read about the news event was considered by asking two questions on one of the questionnaires.

Pre-test. A one-session pre-test was conducted two weeks prior to the experiment. The 11 students who participated were enrolled in an electronic publishing course taught by a faculty member of the college. Pre-test participants were encouraged to make a note on the questionnaires next to any questions that they found unclear. The pre-test also was used to formally assess the amount of time that it would take participants to read the story and to refine the manipulation check.

Instruments and Measures. Two questionnaires were prepared to measure the dependent variables. Questionnaire 1 pertained to recall measurement. The first and only question on this questionnaire asked participants to list all the things they could remember from the article they had just read. The sheet offered 30 numbered, horizontal lines for responses; the question instructed participants to list one item per line. The question was presented on its own sheet so that participants could not use information from questions designed to measure accuracy and the amount of the story they read in their recall responses. Two coders--the researcher and a colleague who did not know the study's final objectives--counted the lines containing items remembered by each participant; this number was considered the recall measure.[8] The coders reported 100% agreement.

Questionnaire 2 pertained to the measurement of the remaining dependent variables. Accuracy was measured using seven fill-in-the-blank questions concerning basic story content. Participants were asked to write down the number of hikers in the story, two hikers' names, two hikers' occupations, the phrase used by hikers to mean "go slowly," and the official name of the charity event in the story. The answers to these questions appeared at least twice in the article in both treatments. The coders, who used a sheet of acceptable accurate answers during coding (the coders formulated the list of answers together before coding), reported 100% agreement.

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[8] These answers were not checked for accuracy, which was measured separately using Questionnaire 2.

Five multiple-choice questions were designed to measure the amount of the story participants read. Questions were based on content from five sections in the article. The sections were determined by dividing the number of words in the article (4,234) by five (846.8). Choices A and B offered one correct answer and one incorrect answer, although not necessarily in that order. The third and final choice gave participants the option to check "Didn't read that part." Participants were given 1 point for answering either A or B and zero points for C. In other words, it was assumed that an attempt to answer a question by choosing A or B meant the participants had read that part of the story. This method was chosen so that the measure would not discriminate against participants with relatively limited abilities to remember accurately what they had read.

The user satisfaction measure was adapted from the scale used in Kamerer and Wilcox (1993); Mueller and Kamerer (1995) also adapted questions from this scale in their study of reader preference for electronic newspapers. Participants read an item and circled the number that corresponded to their agreement (Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree) with the item. The items were: "I wish all news material were designed like this article"; "The layout of the article was attractive"; "The article was extremely detailed"; "It was difficult to read from the screen"; "It was difficult to understand the point of the article"; and "It was easy to read the story." The third item was dropped to increase scale reliability. Reliability analysis in Statistical Package for the Social Sciences (SPSS) showed a Chronbach's alpha score of .68 for the five-item scale.

The perceived story credibility measure was adapted from the 5-point bipolar-statement news credibility scale printed in a chapter by Rubin (1994). The items were: Is factual/Is opinionated; Is biased/Is unbiased; Tells the whole story/Does not tell the whole story; Is accurate/Is inaccurate; Does separate fact and opinion/Does not separate fact and opinion; Can be trusted/Cannot be trusted. Reliability analysis showed a Chronbach's alpha score of .72 for the six-item scale.

The hypertext comfort measure consisted of three questions: "Rate your comfort with reading news articles on the computer"; "Rate your comfort with clicking links to get information"; "How often do you read on the Web (other than e-mail) during a typical week?" Responses ranged from "Very comfortable" to "Very uncomfortable" for the first two questions and from "Frequently" to "Never" for the third. Reliability analysis showed a Chronbach's alpha score of .60 for the three-item scale.

Analysis. The data were analyzed using SPSS. To test the hypotheses, correlation and analysis of variance were employed. ANOVA also was used to determine (a) whether mean differences between the treatments regarding the dependent variables were statistically significant, (b) whether knowing about the event or reading the article before the session had any significant effects on the dependent variables, and (c) whether monitor size had any significant effects on the dependent variables.

The independent variable in this study was story format (a linear, scrolling Web page versus a nonlinear hypertext). The dependent variables were hypertext comfort, user satisfaction, perceived story credibility, recall, accuracy, and the amount of the story that participants read (amount read). Time users spent with the story was also measured. Table 1 shows the mean scores and standard deviations for the dependent variables.

Table 1: Mean scores and standard deviations for the dependent variables

	Linear		Nonlinear		All	
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**
Hypertext Comfort	2.19	0.51	2.26	0.51	2.22	0.51
User Satisfaction	3.46	0.57	3.53	0.66	3.50	0.61
Perceived Story Credibility	3.53	0.62	3.69	0.66	3.60	0.64
Recall	20.94	6.89	21.69	6.91	21.30	6.88
Accuracy	5.05	1.47	5.31	1.53	5.17	1.50
Amount Read	4.42	0.86	4.34	0.92	4.38	0.89
Time Spent (minutes)	19.59	4.26	21.03	5.48	20.27	4.91

Results

H1 predicted that regardless of treatment format, participants' hypertext comfort scores would be significantly and positively related to their scores on all dependent measures. Findings partially supported this hypothesis. Hypertext comfort correlated significantly and positively with user satisfaction and perceived story credibility; it did not correlate significantly or positively with accuracy and amount read (see Table 2). The correlation between recall and hypertext comfort approached significance (p=.059).

Table 2: Hypertext comfort correlations

	User Satisfaction	**Perceived Story Credibility**	**Recall**	**Accuracy**	**Amount Read**
Hypertext Comfort	.185 p=.035	.179 p=.047	.170 p=.059	-.033 p=.714	-.008 p=.933

H2 predicted that regardless of treatment format, participants' perceived story credibility scores would be significantly and positively related to their user satisfaction scores. The results supported this hypothesis. The correlation between user satisfaction and perceived story credibility was significant at the p=.01 level (see Table 3).

Table 3: Correlation of credibility and satisfaction

	User Satisfaction
Perceived Story Credibility	.311 p=.000

H3 had suggested that participants who used the nonlinear treatment would have significantly higher satisfaction scores than participants who used the linear treatment. The findings did not support this hypothesis. In other words, participants who used the nonlinear treatment were as satisfied as those who used the linear treatment.

Discussion

Hypertext comfort and user satisfaction. Results showed a significant positive correlation between hypertext comfort and user satisfaction, meaning that--regardless of format used--participants who reported high levels of hypertext comfort (relative to other participants) felt more satisfied than did participants who reported low levels of hypertext comfort. This finding is not surprising. It makes sense that users who feel comfortable using a medium feel more satisfied with their experience of information presented in that medium. In most cases, users who feel comfortable with hypertext are likely in control of their experience--they have learned to scroll and click to get information and probably feel satisfied when they have called up certain information. On the other hand, users who feel uncomfortable with hypertext may feel less in control--they probably are more prone to disorientation (the feeling of being lost within a hypertext). Based on the idea that hypertext can provide emotional satisfaction, it seems natural that low comfort levels, which likely are accompanied by disorientation and feelings of frustration, could negatively affect satisfaction.

Hypertext comfort and perceived story credibility. Findings also showed that comfort with hypertext correlated positively with perceived story credibility. In other words, participants who reported high levels of hypertext comfort (relative to other participants) found the story significantly more credible than did participants who reported low levels of hypertext comfort. It could be that, as reasoned in the hypothesis, comfort with scrolling and/or clicking online documents to access information increases one's perception of information as credible. It also could be that, given the association between reliance and credibility found in Johnson and Kaye (1998), users who are comfortable with hypertext are more reliant on online media in general and that reliance on online media leads to a higher perceived credibility as well as comfort.

In any case, it appears that online news sites have a chance of their articles being perceived as more credible by the next generation of users (who will be familiar with hypertext). This finding could be important for online newspapers, which can offer plenty of what users focus on: text. High perceived story credibility could be useful in building and retaining readership. Moreover, increased perceptions of story credibility in an online newspaper could boost perceptions of the news organization that produces the online newspaper. This finding appears to be good news for online news in general. Yet, given the newspaper industry's credibility concerns (ASNE, 1999), it might be of particular interest to newspaper organizations when considering online newspapers because it suggests that solid investment of time and resources in crafting effective online news stories now could pay off significantly with higher perceptions of the news organization's overall credibility in the future.

Hypertext comfort and recall, accuracy. Results showed that comfort with hypertext does not correlate with users' recall or users' accuracy in recalling story content, although the correlation with recall approached significance. In other words, participants who reported feeling very comfortable with hypertext did not have significantly higher recall or accuracy scores than those who reported lower comfort levels. It might be that the participants found the article generally interesting, paid attention to it, and had no trouble recalling information and answering general questions about the content accurately. At any rate, these findings suggest that presenting an article in either format (linear or nonlinear) would not offer users who are comfortable with hypertext a significant advantage: Users who are not as comfortable with hypertext would recall as much information from either story format and recall it as accurately.

Hypertext comfort and amount read. Findings also showed that comfort with hypertext does not correlate with how much of a story one reads by scrolling and/or clicking. This finding might reflect the instruction that all participants received to read the entire story or to read for at least 15 minutes. Other explanations might be that the questions designed to measure amount read were too easy and/or that participants guessed the answers rather than circling "Didn't read that part."

Perceived story credibility and user satisfaction. Results showed a significant positive correlation between perceived story credibility and user satisfaction. In other words, participants who perceived the story as more credible also were more satisfied with their experience of the article in general. As reasoned in the hypothesis, it is possible that participants who felt the story was credible paid more attention to it and so they felt more satisfied than participants who perceived the story as less credible. Similarly, it is possible that participants who felt they could trust the information that the story offered felt more satisfied. However, it is also possible that participants who felt satisfied by their experience and/or the article content more felt they could trust the information more.

From the data analyzed in this study, it is impossible to tell if credibility is a predictor of satisfaction or vice versa. It would be interesting to replicate this test using a more controversial story (e.g., a story about political issue) or multiple stories that had been prejudged to vary significantly in their credibility to see whether the correlation holds. Deliberate use of such a story or stories may be helpful in figuring out which variable predicts which or whether one variable is a predictor of the other at all.

In any case, the correlation warrants further inquiry. If perceived story credibility is found to be a predictor of satisfaction, then it would be vital for online news to be credible (as well as to avoid the perception that the content cannot be trusted) in order to satisfy users. Such a finding would have implications for how advertising and special sections are handled on online news sites in general. However, if satisfaction is found to be a predictor of perceived story credibility, it would be crucial for online publications to learn which formats satisfy their users. Here, the importance of audience analysis comes into play.

Web use is completely discretionary, so users must be kept happy (Nielsen, 2000). Keeping users happy requires Web editors to understand the needs of their audiences. For example, if senior citizens make up the majority of publication's readership and it is known that most senior citizens are not comfortable with hypertext, it would be best to present articles in a linear, scrolling format that uses large bold headlines to distinguish story sections. However, if a publication's audience consists mostly of younger, career-oriented members who do not have much time to read the news and who are known to prefer clicking links to specific information presented briefly, it would be important to present articles in nonlinear hypertext formats so that users could get the information they need quickly and feel satisfied. It might be somewhat expensive to conduct a large-scale, scientific audience analysis to find out which formats users prefer. But, if satisfaction predicts credibility, the expense could pay off later in terms of higher perceived credibility.

This issue deserves the newspaper industry's attention because a 1999 study by the American Society of Newspaper Editors revealed that "the public perceives that newspapers don't consistently demonstrate respect for, and knowledge of, their readers and communities" (ASNE, 1999). The newspaper industry might turn to online newspapers to improve this perception of newspapers. Offering online news in formats that meet users' needs would be one way of demonstrating respect for and knowledge of readers. Given the correlation between credibility and satisfaction, respecting readers' online needs ultimately could enhance perceived credibility of a news organization and its products overall.

Effect of format on user satisfaction. Results indicated that format had no effect on user satisfaction. In other words, users of the linear article felt as satisfied as did users of the nonlinear article. It may be that user interest in the content was an intervening variable. The study failed to consider how much interest participants had in the article they were asked to read. Future research probably should consider this point in order to make results about the effect of format on user satisfaction more meaningful.

In addition, for any study testing the effect of format on user satisfaction, results regarding satisfaction would be more meaningful if users choose a story (or stories) from a list of stories about a range of topics, as in the study by Huesca et al. (1999). This would increase the opportunity for participants to pick stories that interest them. It could be especially useful to test stories that are not likely to be inherently interesting but are of significant importance (i.e., stories on health care reform, government budgets, and zoning). Testing both stories that users find interesting and stories that users find boring would enhance general understanding of the effect of format on user satisfaction.

The lack of a significant difference between treatments also might be explained, at least in part, by the artificiality of the lab environment: Results might have been different had participants (1) read the articles in their homes or on whatever computers they find most comfortable to use and/or (2) selected the article at their leisure without being asked to read an entire story that may or may not have interested them significantly. It also could be that the age and general computer familiarity of the users limited the variance in user comfort with both formats.

The finding that format did not affect user satisfaction need not be seen as a significant strike against the argument that hypertext can enhance users' experience of information. The Internet is a user-driven medium; but in this experiment, the user experience was very much driven by the researcher, who selected the article that the participants read. This limit on user choice may have had a negative impact on participants' user satisfaction scores. This suggests that future research should incorporate story choices, as did Huesca et al. (1999), to improve testing of the argument.

As a final point, user satisfaction scores for participants in both groups fell generally in the middle of the spectrum. This result can be read as a "go ahead" for journalists to experiment with nonlinear hypertext story formats--since findings showed that manipulation of the story format had no effect on user satisfaction. It appears, at worst, that putting stories in nonlinear hypertext format does no harm to user satisfaction.

Additional findings. ANOVA tests indicated that story format did not have significant effects on users' satisfaction, perceived story credibility, recall, accuracy, amount read, and time spent reading the story, although the trend for time spent reading the story approached significance (F=2.731, df=1, p=.101) with users of the nonlinear hypertext spending more time reading the story. In other words, this research found no significant differences between the treatments when means for the dependent variables were compared. The results of the treatment comparisons are discussed in Berger (2001).

The lack of a significant difference in recall scores (F=.373, df=1, p=.542) is particularly interesting. This finding confirms the research results of Mensing et al. (1998) as well as the findings of Lee (1998). Both found that story format (linear vs. nonlinear) had no significant effect on recall scores. The results of Mensing et al. (1998) might have been confirmed because of similarities in research design (participants were assigned to read either linear or nonlinear articles). However, research similarity might not be the cause because this finding also confirms the result of Lee (1998), whose design differed from both the study by Mensing et al. (1998) and this study (participants in Lee's study were assigned to read both a linear and a nonlinear article). It could be that, in the year 2001, users are familiar enough with hypertext that they are as capable of recalling information from nonlinear articles as from linear articles. The recall-related findings of Mensing et al. (1998), Lee (1998), and this study contradict the findings of Gordon et al. (1988, cited in Charney, 1994; McKnight, 1996, and Nielsen, 1990, 1995). This flip-flop in recall findings could be due to an increase in exposure to hypertext systems (especially the World Wide Web) in the 1990s; however, any increase might be limited to this population (college students who likely have been exposed to hypertext systems during their educations).

Limitations of the study. This study had several limitations that should be considered (along with the ideas suggested in the discussion) in interpreting its findings and in designing future research. First, although the scales used to measure hypertext comfort, user satisfaction, and perceived story credibility were judged sufficiently reliable considering their small numbers of items, they were not as reliable as it was hoped they would be. Furthermore, the comfort measure contains technically only two items that measure comfort. More reliable scales probably should be developed and/or the adaptation of existing scales improved for measuring these variables in the future.

Second, results based on a study of 18- to 25-year-old advertising students have limited generalizability. These students were all relatively the same age, but actual newspaper readers would represent a far larger age range and thus likely broader variance in hypertext comfort, user satisfaction, and perceived story credibility. Therefore, it is imperative that future research investigate whether age affects the dependent variables analyzed in this study. The sample also lacked balance in terms of the ratio of female participants to male participants (93:32). However, results showed that gender had no significant effects on the dependent variables. The ratio of females to males may be less problematic, though, as Pew Research (1998, 2000) indicates that women are increasingly in the majority of Web users.

Third, the experiment was conducted in different labs. To the credit of the study, ANOVA showed that monitor size in the labs (whether 17-inch or 21-inch) did not have any significant effects on the dependent variables. Still, consistency in setting and equipment is preferable in an experiment.

Fourth, despite the selection of a non-local, non-national story and the consideration of prior exposure to the story, the use of a regional newspaper may have led to some participants being familiar with some of the content (e.g., references to Florida) and biasing the results. Perhaps an out-of-state newspaper may have been more appropriate.

Finally, the experiment lacked a method for precise measurement of the amount of time each participant spent reading the story. This factor warns against basing any future hypotheses about time spent with linear stories versus time spent with nonlinear stories on the results of this study alone. Future experiments could employ scripts that have the computer time-stamp the treatments used by participants. Scripts also can track time spent in each node as well as the paths users take through a nonlinear treatment. Such scripts yield data that could be analyzed for insight into how users read nonlinear hypertexts.

Conclusions. This study found significant positive correlations between hypertext comfort and user satisfaction; hypertext comfort and perceived story credibility; and perceived story credibility and user satisfaction. It also found that story format had no significant effect on user satisfaction, perceived story credibility, recall, accuracy, or the amount of a story users read.[9] On one hand, this suggests that journalists' rushing to create nonlinear hypertexts would offer no immediate benefit to online news sites. On the other hand, the results indicate that no harm would come from journalists' trying out different story formats for online news features. It appears that online journalists should not be discouraged yet if their organizations cannot afford to experiment with new formats; however, journalists at organizations that can afford to might as well because the results suggest that experimenting with new formats would not damage user satisfaction and perceived story credibility. Moreover, both satisfaction and credibility could be even higher in the future if more effective formats are developed.

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[9] See Berger (2001) for the results and analysis of the treatment comparisons.

In sum, this study concludes that experimentation with nonlinear formats, which has been encouraged in the trade press (Fitzgerald, 1996; Dube 2000; Outing, 2000; Scanlan, 2000), would not do harm and might prove crucial for the future (when online news consumers take hypertext for granted). This conclusion has important implications for online newspapers. Creating effective nonlinear hypertexts might be one way that online newspapers could enhance user satisfaction and perceptions of news credibility in the future as long as user comfort with hypertext generally increases. In addition, publishing in nonlinear formats might help online newspapers prepare for the emerging publishing landscape in which, as Outing (2000) has observed, newspaper companies will likely be publishing to print-delivered media, home-printed media, the Web, e-mail, personal digital assistants (or hand-held computers), mobile phones, e-readers (or e-book readers), pagers, and Internet radio. If journalists start writing for nonlinear hypertexts, they will develop the kind of texts that are more easily distributed to a variety of electronic devices, more usable on those devices, and possibly more satisfying to online news consumers in the long run.

Suggestions for Future Research. Researchers might replicate this study by correcting its weaknesses to see whether the correlations hold. Future studies also should address potential differences between the linear and nonlinear formats for the dependent variables, as in Berger (2001); studies that improve the measures used in this research could draw more definitive conclusions regarding potential differences. Future research certainly would benefit from the development of a stronger, more sophisticated measure of hypertext comfort. A replication also might investigate whether liking of or interest in the story intervenes with user satisfaction and/or maybe credibility. Questionnaire 2 also might ask participants to report their hometown(s) because, in this experiment, it was possible that credibility and user satisfaction scores of participants from southwest Florida might have been affected by the story's favorable representation of southwest Floridians.

Future studies could use variations on the experimental design used in this study. Whereas this study tested the effects of one story presented two ways (linear and nonlinear), future studies could compare the effects of format using two (or more) stories. It would be important to do this for two reasons: First, offering users story choices would be a better simulation of everyday life because when users go online for news, they are presented with choices. Second, using several stories would enable researchers to hypothesize about what kinds of stories are effective when presented in nonlinear formats. Findings based on such hypotheses would be especially useful to online journalists.

In this study, the researcher made an educated guess that a non-breaking news feature incorporating 18 perspectives on the same event (not including the journalist's perspective) would be suitable for telling via nonlinear, Web-based hypertext. Presenting a news brief or a 500-word story in a nonlinear hypertext format did not appear to make sense. As for breaking news, a nonlinear hypertext presentation also did not seem to make sense both methodologically and logically: By the time the components would be crafted and linked, the news no longer would be breaking. Users, however, might prefer reading some or all of these kinds of stories in nonlinear formats now or someday. Naturally, they would turn to the outlets that provide them. It is time to investigate which online story formats users prefer for different kinds of stories so that online news sites may better serve and satisfy their users.

References

American Society of Newspaper Editors. (1999, August 6). Examining our credibility: Perspectives of the public and the press. Retrieved March 5, 2001, from the World Wide Web: http://www.asne.org/kiosk/reports/99reports/1999examiningourcredibility/

Berger, S. (2001). Breaking up news--An investment in the online newspaper's future? Effects of linear and nonlinear hypertext formats on users' recall, reading, satisfaction, and perceived story credibility. Retrieved August 5, 2001, from the World Wide Web: http://stephanie.berger.net/thesis/master.pdf

Berry, D. L. (1999). Comprehension and recall of Internet news: A quantitative study of Web page design. Presented at the 82nd annual convention of the Association for Education in Journalism and Mass Communication, New Orleans, August 4-7, 1999. Retrieved July 11, 2000, from ERIC on-line database (ED 434 373)

Bolter, J. D. (1991). Writing space: The computer, hypertext and the history of writing. Hillsdale, NJ: Lawrence Erlbaum Associates.

Bush, V. (1945). As we may think. Atlantic Monthly, 1(6), 101-108. Retrieved September 28, 2000, from the World Wide Web: http://www.theatlantic.com/unbound/flashbks/computer/bushf.htm

Charney, D. (1994). The effect of hypertext on processes of reading and writing. In C. L. Selfe & S. Hilligoss (Eds.), Literacy and Computers: The Complications of Teaching and Learning with Technology (pp. 238-263). New York: The Modern Language Association of America.

Chyi, H. I. & Lasorsa, D. (1999). Access, use and preferences for online newspapers. Newspaper Research Journal 20(4), 2-13.

Conklin, J. (1987). Hypertext: An introduction and survey. I. E. E. E. Computer 20(9), 17-41.

Deuze, M. (1998). The WebCommunicators: Issues in research into online journalism and journalists. First Monday, 3(12). Retrieved October 5, 2000, from the World Wide Web: http://www/firstmonday.dk/issies/issue3_12/deuze/

Deuze, M. (2001). Understanding the impact of the Internet: On new media professionalism, mindsets and buzzwords. Ejournalist, 1(1). Retrieved February 17, 2001, from the World Wide Web: http://www.ejournalism.au.com/ejournalist/deuze.pdf

Dube, J. (2000, November 22). Writing news online. Poynter.org Tip Sheets. Retrieved February 17, 2001, from the World Wide Web: http://www.poynter.org/dj/112200.htm

Fitzgerald, M. (1996, April 13). The effect of the Internet on print journalism. Editor & Publisher, 129(15), 72.

Fredin, E. (1997). Rethinking the news story for the Internet: Hyperstory prototypes and a model of the user. Journalism and Mass Communication Monographs, 163, 1-47.

Gordon, S., Gustavel, J., Moore, J. & Hankey. J. (1988). The effects of hypertext on Reader knowledge representation. Proc. Human Factors Society 32nd Annual Meeting, 296-300.

Gubman J. & Greer, J. (1997). An analysis of online sites produced by U.S. newspapers: Are the critics right? Presented at the 82nd annual convention of the Association for Education in Journalism and Mass Communication, Chicago, July 30-August 2, 1997. Retrieved September 10, 2000, from the World Wide Web: http://list.msu.edu/cgi-bin/wa?A2=ind9710A&L=aejmc&P=R45962

Guay, T. (1995). Web publishing paradigms [Information Technology Project Group paper]. Retrieved February 19, 2001, from the World Wide Web: http://hoshi.cic.sfu.ca/~guay/Paradigm/

Harper, C. (1996). Online newspapers: Going somewhere or going nowhere. Newspaper Research Journal 17(3-4), 2-13.

Henderson, B. & Fernback, J. (1998). The campus press: A practical approach to on-line newspapers. In D. L. Bordon & K. Harvey (Eds.), The Electronic Grapevine: Rumor, Reputation and Reporting in the New On-Line Environment (pp. 113-121). Mahwah, NJ: Lawrence Erlbaum Associates.

Huesca, R. Dervin, B. Burwell, J., Drake, D., Nirenberg, R., Smith, R., & Yeager, N. (1999). Inverted pyramids versus hypertexts: A qualitative study of readers' responses to competing narrative forms. Presented at the 82nd annual convention of the Association for Education in Journalism and Mass Communication, New Orleans, August 4-7, 1999. Retrieved August 30, 2000, from the World Wide Web: http://www.trinity.edu/rhuesca/hyperaej.html

Huesca, R. (2000). Bright future for hypertext, NOT. Retrieved September 20, 2000, from the World Wide Web: http://www.trinity.edu/rhuesca/hypercaut.html

Johnson, M. (2001). A tangled Web we write. Quill 89(1), 11.

Johnson, T. & Kaye, B. (1998). Cruising is believing?: Comparing Internet and traditional sources on media credibility measures. Journalism & Mass Communication Quarterly 75(2), 325-340.

Kamerer, D. & Wilcox, B. (1993). Computer literacy, technology use, and Compact Disc Interactive: An exploratory study. Retrieved September 15, 2000, from ERIC on-line database (ED 362 917)

Keep, C., McLaughlin, T., & robin. (1995). Hypertext. In The Electronic Labyrinth. Retrieved January 4, 2001, from the World Wide Web: http://jefferson.village.virginia.edu/elab/elab.html

Landow, G. P. & Delany, P. (1991). Hypertext, hypermedia and literary studies: The state of the art. In P. Delany & G. P. Landow (Eds). Hypermedia and Literary Studies (pp. 3-50). Cambridge, MA: MIT Press.

Landow, G. P. (1992). Hypertext: The convergence of contemporary critical theory and technology. Baltimore, MD: Johns Hopkins University Press.

Lee, M. J. (1998). The effects of hypertext on readers' recall based on gender. Presented at the 81st annual convention of the Association for Education in Journalism and Mass Communication, Baltimore, August 5-8, 1998. Retrieved February 14, 2001, from the World Wide Web: http://list.msu.edu/cgi-bin/wa?A2=ind9812A&L=aejmc&P=R3781

Lowrey, W. (1999). From map to machine: Conceptualizing and designing news on the Internet. Newspaper Research Journal 20(4), 15-27.

Martin, S. E. (1999). How news gets from paper to its online counterpart. Newspaper Research Journal 19(2), 65-73.

McAdams, M. J. and Berger, S. (2001). Hypertext. Journal of Electronic Publishing, 6(3). Retrieved March 1, 2001, from the World Wide Web: http://www.press.umich.edu/jep/06-03/mcadams.html

McKnight, C. (1996). What makes good hypertext? In H. van Oostendorp & S. de Mul (Eds.) Cognitive Aspects of Electronic Text Processing (pp. 213-238). Norwood, NJ: Ablex Publishing Company.

Mensing, D., Greer, J., Gubman, J., & Louis, S. (1998). Measuring recall of linear and non-linear online news stories. Presented at the 81st annual convention of the Association for Education in Journalism and Mass Communication, Baltimore, August 5-8, 1998. Retrieved September 1, 2000, from the World Wide Web: http://list.msu.edu/cgi-bin/wa?A2=ind9812A&L=aejmc&P=R3781

Meyer, E. (1996, October). A gathering of gadflies: The newspaper industry's quest for silver bullets reaches online [Online-only column]. American Journalism Review. Retrieved October 14, 2000, from the World Wide Web: http://ajr.newslink.org/emcol4.html

Morkes, J. & Nielsen, J. (1997). Writing for the Web. Retrieved October 23, 2000, from the World Wide Web: http://www.useit.com/papers/webwriting/

Mueller, J. & Kamerer, D. (1995). Reader preference for electronic newspapers. Newspaper Research Journal 16(3) 3-13.

Murray, J. (1997). Hamlet on the holodeck: The future of the narrative in cyberspace. Cambridge: The MIT Press.

Nelson, T. (1990). Literary machines. Sausalito, CA: Mindful Press.

Nielsen, J. (1990). Hypertext and hypermedia. San Diego, CA: Academic Press, Inc.

Nielsen, J. (1995). Multimedia and hypertext: The Internet and beyond. Boston, AP Professional.

Nielsen, J. (2000). Designing Web usability: The practice of simplicity. Indianapolis, IN: New Riders.

Outing, S. (2000, December 27). Online news advice for 2001. Stop the Presses! Retrieved March 4, 2001, from the World Wide Web: http://editorandpublisher.com/ephome/news/newshtm/stop/st122700.htm

Palser, B. (2000). Surfing by design. American Journalism Review 22(7), 72.

Pang, A.S.-K. (1998). Hypertext, the next generation: A review and research agenda. First Monday,3(11). Retrieved November 16, 2000, from the World Wide Web: http://www.firstmonday.org/issues/issue3_11/pang/

Pew Research Center for the People and the Press. (1996). One-in-ten voters online for Campaign '96. Retrieved February 20, 2001, from the World Wide Web: http://www.people-press.org/tec96-1.htm [2001, February 20].

Pew Research Center for the People and the Press. (1998). Online newcomers more middle-brow, less work-oriented: The Internet news audience goes ordinary. Retrieved March 2, 2001, from the World Wide Web: http://www.people-press.org/tech98sum.htm

Pew Research Center for the People and the Press. (2000). Investors now go online for quotes, advice: Internet sapping broadcast news audience. Retrieved February 20, 2001, from the World Wide Web: http://www.people-press.org/media00rpt.htm

Rich, C. (1997). Newswriting for the Web. Retrieved September 15, 2000, from the World Wide Web: http://members.aol.com/crich13/poynter1.html

Rubin, A. M. (1994). News credibility scale. In R. B. Rubin, P. Palmgreen, P. & H. E. Sypher, Eds. Communication Research Measures: A Sourcebook (pp. 234-237). New York: Guilford Press.

Scanlan, C. (2000). The Web and the future of writing. Retrieved October 20, 2000, from the World Wide Web: http://poynter.org/centerpiece/062100.htm

South, J. (1999, June 11). Web staffs urge the print side to think ahead. Online Journalism Review. Retrieved October 20, 2000, from the World Wide Web: http://ojr.usc.edu/content/story.cfm?id=161

Spool, J. M. (1999). Web site usability: A designer's guide. San Francisco, Calif.: Morgan Kaufman Publishers, Inc.

Stanford University & The Poynter Institute. (2000). EyeTracking online news. Retrieved October 1, 2000, from the World Wide Web: http://www.poynter.org/eyetrack2000/index.htm

Sundar, S. S. (1998). Effect of source attribution on perception of online news. Journalism and Mass Communication Quarterly 75(1), 55-68.

Sundar, S. S. (1999). Exploring receivers' criteria for perception of print and online news. Journalism and Mass Communication Quarterly 76(2), 373-386.

Tremayne, M. (1999). Media convergence on the Internet. Presented at the 82nd annual Convention of the Association for Education in Journalism and Mass Communication, New Orleans, August 4-7, 1999. Retrieved February 15, 2001, from the World Wide Web: http://list.msu.edu/cgi-bin/wa?A2=ind9909B&L=aejmc&P=R63833.

Tremayne, M. (2000). The hypermedia news story. Presented at the 83rd annual convention of the Association for Education in Journalism and Mass Communication, Phoenix, August 9-12, 2000.

Vargo, K., Schierhorn, C., Wearden, S. T., Schierhorn, A. B., Endres, F. F. & Tabar, P. S. (2000). How readers respond to digital news stories in layers and links. Newspaper Research Journal, 21(2), 40-54.

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Jung-Sook Lee Competition

CYBERNEWSERS, DESERTERS AND INCLUDERS

An Analysis of Internet News Users and the Effect on Traditional News Media Use

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CYBERNEWSERS, DESERTERS, AND INCLUDERS

Jung-Sook Lee Competition

INTRODUCTION

Every minute in the United States, 38 people are logging onto the Internet for the first time. By the beginning of the 21st Century, more than two-thirds of the people in this country had access to the Internet. At the same time, every day the World Wide Web increased by 3.2 million new pages and 715,000 images (UCLA Center, 2000).

One of the most popular uses of the new medium is reading news, with 57 percent of Internet users saying they have added online news to their media habit (UCLA Center, 2000). On the day after the dramatic election in November 2000, 18 percent of all people in the United States went online to find out the latest on the contested race between George W. Bush and Al Gore (Pew 2000b).

Internet news isn't just a curiosity. In a Pew Research Center study (2000a), online news readers rated the Internet versions of well-known news sources such as CNN, ABC, and USA Today as more believable than the traditional televised or printed editions from those media organizations. Internet growth and online news use are conjuring up comparisons to the era when radio news muscled in on newspaper turf as a place to turn for news, and later when television pushed both newspapers and radio aside and established itself as one of the main sources for news. With the unprecedented growth of the Internet and online news and the decline in use of traditional news sources, it is important to find out who is turning to the Internet for news. Are Internet news users different from other news consumers? Are there differences amongst people using the Internet for news depending on how much time they spend reading news online? Also, since people started using the Internet for news, what has that meant for their reliance on traditional news media? This study will attempt to answer these questions.

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

Because using the Internet for news involves the adoption of new technology, questions on how free time is spent, and individual decisions on finding the best source for information, three different approaches to media theory will be explored for a better understanding of online news users and their effect on traditional news media: (1) diffusion of innovations; (2) relative constancy; (3) uses and gratifications.

Diffusion of Innovations

One benchmark of the popularity of a new innovation is how long it takes for 30 percent of the population to adopt it. Electricity took 46 years. Telephone use didn't hit the 30 percent mark for 38 years. Even television was available to the public for 17 years before three out of every ten people had a set (Rogers, 1995). But the Internet passed the 30 percent mark in just seven years (UCLA Report, 2000).

People didn't just wake up one day and decide the Internet would be a good place to find out about news. The end result of adding to or changing news media habits involves several variables, both among the users and the technology itself. The diffusion of innovations theory has been used to explain ideas and processes as diverse as hybrid seeds in Iowa and boiling water in Peru (Rogers, 1995). The purpose of the theory is to find out why some innovations are adopted quickly and why others take longer or are even rejected. Diffusion of innovations not only explores the attributes or problems with the innovations themselves, but also the characteristics of the people who either are quick to embrace the change or wait until most other people have already made their decisions.

Before Internet news could even be a possibility, personal computers had to be adopted. The first microcomputers designed for home use hit the market in the mid-1970s. Through the first several years, the main uses were playing video games, word processing, and computing as a hobby. After about the first decade of sales, about 18 percent of U.S. households had home computers, which is about the same speed of adoption of cable TV and VCRs. But in the mid-1980s, the rate of adoption started to slow (Dutton, Rogers, & Jun; 1987).

By the mid-1990s, home computers still were not even in a quarter of the homes in the United States. But as the Internet became easier to navigate, specifically with the development of the World Wide Web, the rate of adoption sped up considerably. By 1998, home computers were in 37 percent of the households and more than half of those computers had Internet access. Only two years later, in October 2000, more than half of the homes in the United States, or 51 percent, had a computer and 42 percent of those homes also had the capability to go online. (U.S. Department of Commerce, 2000).

Diffusion of innovations theory holds that each new idea has five attributes that have to be judged as people consider the innovation; relative advantage, compatibility, complexity, trialability, and observability (Rogers, 1995, p.212-251). Relative advantage concerns the degree to which the innovation is considered better than other options. In this case "better" can involve anything from price to social status. An example would be the videocassette recorder, which started to become popular when the price dropped from $1200 to $200.

Compatibility involves whether or not the innovation is consistent with needs, past experiences, and values. Complexity involves how difficult the new idea is to first understand and then to use. The more complex the innovation, the slower the diffusion. Early home computers were considered too complicated by many people, which might have slowed down the rate of adoption.

Trialability has to do with the extent of access people may have to a new idea before they have to actually make a decision. Since computers were used in the workplace before they became widespread in homes, many people may have made their decision on whether or not to purchase a home computer based on their experiences at work. Observability brings into account how obvious the benefits of the innovation are to people who haven't made a decision yet.

But it's not just the innovation that has to be understood, but the people making the decisions as well. Diffusion of innovations theory separates the population into two equal-sized groups: early adopters and late adopters. Those two groups also contain different subgroups: early adopters include innovators, early adopters, and the early majority, while late adopters are made up of late majority and laggards (Rogers, 1995).

Early Adopters. The first people to latch onto a new idea are considered the innovators. This small group only includes 2.5 percent of the population and isn't always seen as a good judge of the viability of the product. They are considered venturesome and play the important role of gatekeeper for the new product. The next group to embrace the new idea is known as the early adopters. This group, which includes the next 13.5 percent of the population, is seen as very important to the success of an innovation because the subgroup of early adopters has the respect of the rest of the population:

> The early adopter decreases uncertainty about a new idea by adopting it, and then conveying a subjective evaluation of the innovation to near-peers through interpersonal networks. (Rogers, 1995, p. 264)

After the early adopters comes the early majority which comprises 34 percent of the population and added with the other two sub-groups, makes up the first half of the people using the new idea. People in the early majority are considered deliberate and spend more time than the previous two groups in deciding on whether or not to use the innovation.

Late Adopters. The next 34 percent of the population to accept an idea are called the late majority. These people are skeptical of the innovation and are very cautious about embracing the change. The final group has been dubbed the laggards for its place as the last 16 percent of a population to accept the idea. Laggards tend to be suspicious of the new idea and often don't have the money to make the change until it is absolutely necessary.

Through numerous studies of the diffusion of innovations, certain characteristics have become apparent for those people who are early adopters as compared to those who are considered late adopters. These characteristics can help explain behavior as a new idea takes hold. Early adopters are more educated, have a higher social status, are better able to cope with risk and uncertainty, have more exposure to mass media communication channels, have more social participation, and have a more favorable attitude towards change (Rogers, 1995 p. 269-274).

Dutton, Rogers, & Jun (1987) studied early adopters of home computers and confirmed the characteristic of a higher education level than non-adopters. The study emphasized that using a home computer is more of an active experience as opposed to an innovation such as television. This early study also noticed dramatic shifts in time use by heavy home computer users, including less time with television.

A couple of more contemporary studies have looked at Internet news from the perspective of online newspapers. Chyi & Lasorsa (1999) found that more than three-quarters of all Web users said they would still prefer a printed copy of a paper over an online version if they both had the same content and cost the same. At the same time, online papers were more popular for out-of-town publications. Weir (1999) used early adopter attributes to see if readers of online newspapers followed the norms of diffusion of innovations. His study didn't find any strong correlation for obvious characteristics such as innovativeness, experience with computers, or even use of the Internet. Weir concluded that diffusion of a medium, such as online newspapers, is different than for most consumable products.

Even just trying to decide which group of adopters, early or late to study; or even what subgroup of early adopters are relevant- innovators, early adopters, or early majority- can be difficult because of the different levels of innovation. On the subject of Internet news, the process of diffusing the innovation can be separated into three different areas. The first innovation was computer use. Then, the next new idea to contemplate was access to the Internet. The latest innovation is using the Internet as a news medium. So comparing computer or even Internet studies can be confusing because they involve different groups at different levels of adoption of different innovations. Take for example, the October figures from the federal government: 51 percent of homes had a home computer in that survey while 42 percent were hooked up to the Internet. (U.S. Department of Commerce, 2000). If you were studying people who are just now buying a home computer, diffusion of innovation percentage, 51 percent, indicate you would be looking at the group known as the late majority. If the subject is Internet use, the 42 percent would fall in the early majority category. But for the purposes of this study, we are looking at an even more specific group of people, those who use the Internet for news at least once a week. In our survey, 43 percent of the people say they go online for news at least once a week. This would put the people making those decisions now in the early majority grouping. People in the early majority take longer than the previous groups to decide whether or not an innovation is worth adopting. They deliberate for long periods of time before making a decision (Rogers, 1995).

Remember that one of the important attributes of an innovation is its relative advantage over other options. The decision to go online in general could involve choosing e-mail over phone calls, job hunting through Web sites rather than the newspaper want ads, or even downloading free songs as opposed to going to a record store and paying for music. But when the specific purpose of using the Internet is to get the news, people are weighing the online innovation against traditional news media. The decisions to change or adapt news media habits get at the core of our research questions. In the area of give and take of media use, the relative constancy theory plays an important role.

Relative Constancy Theory

The basic idea of the relative constancy theory is that there is a limit on what our society will spend on mass communications. There is a specific percentage that the public will spend on newspapers, televisions, computers and other mass media. That percentage stays the same and the dollars only increase with expansion of our economy. So even when a dramatic new medium is introduced, such as television or the home computer, the percentage stays the same. So, when extra money is being spent on a new technology, it is being diverted away from other media. The idea started with publisher Charles Scripps and then was tested empirically by McCombs (1972). McCombs looked at mass media spending and the gross national product in the United States between 1929 and 1968. During this period of important advancements in mass media, McCombs concluded the relative constancy theory holds true:

> The money to create two ubiquitous broadcasting systems, first radio, later television, seems to have come more from changing media habits and general economic growth than from any fundamental shifts in consumer habits-such as allocating mass media a larger share of personal income (McCombs, 1972, p.18-19)

The relative constancy theory was later tested and reaffirmed for the years 1968-1977 (McCombs & Eyal, 1980), and from 1975 through 1987 (Son & McCombs, 1993).

Some researchers though had doubts about how the theory would hold up for the final quarter of the 20th century. Traditional media were challenged with the growing popularity of cable TV, videocassette recorders, home computers, and finally, the Internet. In fact, Son & McCombs (1993) felt that relative constancy wouldn't hold up during the electronic revolution and even hypothesized that the percentage of spending on mass media would increase more than the economy for the late 70s and early 80s. But according to their findings, even with the massive increase in spending for VCRs, cable TV, and computers, the spending didn't outstrip the growth in the economy.

Other studies though, came to different conclusions. Wood (1986) argued that relative constancy works as a historical look at mass media spending but doesn't hold up as a predictor of the future. Wood & O'Hare (1991) and Dupagne (1994) concluded that as people adopted cable TV and VCRs, they didn't cut back on other media to the degree that relative constancy would require. Glascock (1993) looked at the relative constancy theory from 1978-1990 and also showed that the theory didn't stand up in the wake of all the extra money being spent on new technologies such as cable TV and home computers.

Even though the original theory dealt with money spent on mass media, an important question running parallel with the relative constancy theory is the idea of a fixed amount of time. As people embrace new media, are they forced to give up time with old media habits or do they just devote more of their free time to media consumption? McCombs understood the importance of time even in the original study.

> The Principle of Relative Constancy describes a major economic constraint on the growth of media in the marketplace over at least the last 40 years. But even with continued economic growth, mass media consumption may reach asymptote, with the ultimate constraint likely to be scarcity of time. For the immediate decades ahead, these two factors-time and money-will jointly constrain the growth of mass media in the marketplace (McCombs, 1972, p. 62-63).

Much of the relative constancy research started to focus on time to see if it was a limiting factor. Robinson and Jeffres (1979) studied time spent watching television and time spent reading newspapers for any correlation. They found that while the amount of free time had increased, the time spent reading newspapers decreased and time spent watching television increased. But they could not link the drop in newspaper use to the increase in television viewing. In fact, they found that people who read newspapers are more likely to watch local news on television. They suggest that newspapers and television supplement each other instead of compete directly for consumers.

With cable TV spreading through the country during the 1970s and 1980s, several studies looked at cable TV use and what that would mean for traditional media. If the relative constancy theory also meant a fixed amount of time for media, then adding time spent watching cable TV meant subtracting something else. Kaplan (1978) studied the introduction of a cable system outside Sacramento, California. Those people said that with cable TV's addition of the extra channel choices, they were watching less local network television, listening to less radio news, and not going to the movies as often. Grotta & Newsom (1982) also found cable TV to be taking away from local stations, but their findings suggested that overall, cable TV subscribers were using news media more often than non-subscribers. Webster (1984) looked specifically at local television news and showed how cable subscribers were watching less local news, but he cautioned that those people might not have been big fans of local news before they hooked up cable TV. Reagan (1989) combined both relative constancy and diffusion of innovations in his study, which included not only cable TV, but also VCRs, compact discs, and home computers. He found that people who adopted the new technologies didn't differ from non-adopters in the amount of news they read or watched. He concluded that new technologies won't drive people away from news use, instead people will use the new technologies as new sources if they fulfill a need.

In a study of home computer owners before the Internet became a part of the experience, Schweitzer (1991) concluded that non-owners of computers watched more overall television, but there weren't any significant differences in viewership of local or network television news. Bromley & Bowles (1995) did one of the first studies of the Internet and traditional media. They focused on a special project in Blacksburg, Virginia that gave people in the town free, full access to the Internet. The system also included a wide variety of information about events in the community. They found no significant evidence that Internet use resulted in less time with newspapers, televisions or radio. Those people who did say they were using less traditional media, were mostly taking the time from television viewing.

But since the research questions involve the specific actions and interests of online news readers, it is also important to get beyond trends and uses of media to look at these specific people and find out their backgrounds and motivations. The uses and gratifications approach is a critical line of research to find out more about these specific media users to gain a better understanding of what is prompting their media choices.

Uses and Gratifications Approach

Since using the Internet for news is a fairly recent trend, most of the research focuses on the more general topic of Internet use. When the focus is on news use, most of what we've learned involves television or newspapers. But by piecing together uses and gratification research, local and national survey data, and some Internet studies with an emphasis on news, we can start to put together some type of profile of this news media consumer.

While the uses and gratifications approach to communication research has been popular since television started to become an important news source, Ruggiero believes that it is becoming even more important with the introduction of online information:

> It may be argued that the timely emergency of computer-mediated communication has only bolstered the theoretical potency of uses and gratifications by allowing it to stimulate productive research into a proliferating telecommunications medium (Ruggiero, 2000).

Uses and gratifications studies began when researchers started to move away from the idea of a passive media audience accepting whatever was printed in the paper or broadcast through the airwaves (Swanson, 1979b). By acknowledging the audience has some agency, the next step was to look at how the audience chose media sources and what benefits it received from those choices.

Researchers started working on typologies that would differentiate the reasons why people pick certain programs or media over others. One popular typology has been McQuail, Blumler & Brown's four categories: surveillance, diversion, personal identity and personal relationship. Surveillance is described as information about things that might affect people or help them accomplish something. Diversion is considered an emotional release or escape from routines. Personal identity pertains to self-understanding or value reinforcement and personal relationship describes the use of media as a substitute for companionship (McQuail, Blumler & Brown, 1972).

Later, Blumler broke down the uses to cognitive orientation, diversion, and personal identity. In this typology, cognitive orientation includes using the media to find out information about society, diversion once again involves the media as a relief from boredom or the constraints of daily routines, while personal identity stands "...for ways of using media materials to give added salience to something important in the audience member's own life." (Blumler, 1979).

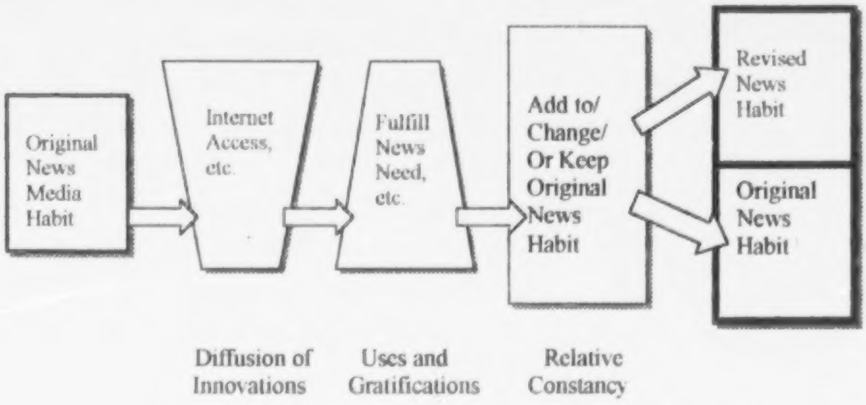
The only constant about uses and gratifications research is that the typologies seem to change with each study. Some researchers took motive definitions from previous studies and made modifications (Abelman, 1989; Levy, 1978), while others ended up developing their own typology through surveys or interviews (Jeffres, 1978; Furno-Lamude & Anderson 1992; McDonald & Glynn, 1984). The constant shifting and changing of typologies reflects the idea that the audience has different motivations for different communication needs. As Blumler and Katz (1974) put it, "...eclecticism never seems elegant."

While the typologies changed in the different studies, they usually contained at least one category such as surveillance or cognitive orientation to describe the motive of seeking out information. Invariably, the people who fit into this category were the ones who were heavier consumers of news than the rest of the population (Rubin, 1983; Palmgreen, 1984; Levy & Windahl, 1984).

Taking a closer look at the people who use media to gather information, those are the people who tend to be more active in choosing various media for their needs. They also tend to be heavier users of media (Rubin, 1983). Plus, people who are looking for specific information are more likely to look across different media to find the best source for that need. (Perse & Dunn, 1998). These characteristics show why people who are interested in news are turning to the Internet for specific information (Papacharissi & Rubin, 2000).

The three theoretical approaches to Internet news use, shown in Figure 1, all explain certain reasons why people may decide to change their news habits or keep them the same. It is not to suggest that there is a linear order in which people make decisions on news media. While they definitely need to have a computer and Internet access to read news online, how other decisions are made depends on the individuals. But to add Internet news to a news habit, a person must perceive online news as fulfilling a need better than other media and the person must either increase the amount of time spent with news media or reduce the use of a particular medium.

Figure 1. The relationship of diffusion of innovations, uses and gratifications, and relative constancy in explaining changes in news habits.



Using a theoretical framework including diffusion of innovations, relative constancy, as well as uses and gratifications research, we can start to gain more understanding into the uses of Internet for news and how those people perceive their habits with traditional news media. While most of the studies on the Internet look at overall use, that research is important to give us an understanding of the type of people who are going online and might be turning to the Internet for news.

Internet News Use Research

Since public discovery and acceptance of the Internet is still fairly new, much of the research has looked at the overall use of the medium. Most studies refer to Internet users. But now that more people are going online and certain uses of the Internet are becoming clearer, we need to be more specific. Just as people watch television for a variety of reasons and content choices, people are using the Internet for their own specific needs as well. Some people may do nothing more than send and receive e-mail. Others might only use the Internet for work purposes. But still others are using the Internet, at least some of the time, to find out what's going on in the world.

The U.S. Census Bureau asked people how they are using the Internet during a survey of 48,000 sample households in August 2000. With that large of a sample, the margin of error is less than one percentage point at the 95% confidence level.

E-mail is clearly the most popular use of the Internet right now with eight out of ten people saying they send and receive electronic messages regularly. The second most popular activity, at 59 percent, is searching for information online. Keeping up with the news finishes in third, with 43 percent of the people saying they regularly use the Internet as a news source. The percentage of people looking for news on the Internet goes up to 46 percent when specifically talking about Internet use from the home. The other regular tasks mentioned by respondents were taking courses and job-related tasks, both at 35 percent, shopping/paying bills at 30 percent and searching for a job at 16 percent. (U.S. Department of Commerce, 2000)

Other research has concluded that there are two main reasons people are surfing the Web: to look for information (Papacharissi & Rubin, 2000, Althaus & Tewksbury, 2000) and to be entertained (Ferguson & Perse, 2000). The number and percentage of people who are using the Internet to find news is increasing dramatically. The Pew Research Center surveys show that in 1995, only 4 percent of Internet users looked for news at least once a week. Four years later, that percentage had jumped to 33 percent (Pew, 1999, 2000a).

With an increasing number of people using the Internet for news, the obvious concern for traditional news organizations is losing their audience to the new medium. But so far, the data is mixed on the effect of the Internet on television news and newspapers. Some studies have shown that even though more people are adding an extra news source, they are not cutting back on their dose of traditional news media (Schweitzer, 1991; Bromley & Bowles, 1995; Althaus & Tewksbury, 2000; Stempel, Hargrove, & Bernt, 2000). Nielsen insists that its longitudinal surveys show that even though Internet users are lighter viewers of television, those people watched less television than the general public even before they turned on their computers for news (Nielsen, 1999). But other researchers looking into Internet use and its effect on local television news say the television newscasts are losing viewers to the Web (Pew 1999, 2000a; Magid, 1999).

Most traditional news media aren't waiting to find out if the Internet will mean a major drain on users. They've already set up Web sites to catch as many Internet news users as possible. Much like newspapers starting radio stations in the 1930s and radio stations starting television stations in the 1950s, traditional media owners are trying to anticipate the future by co-opting the new technology. But success in print or over the air certainly doesn't equate to the same results in cyberspace. Since research shows people who want news will find the medium that fits the need (Becker, 1979; Perse & Dunn, 1998), there must be something about or on the Internet that is fulfilling a need more effectively than newspapers or television. Plus, the traditional media are fighting for Internet news users with countless other choices for news content on the Web. The stakes are definitely high as Althaus & Tewksbury (2000) found out when they focused on the heavy users of Internet news:

> …while most respondents see television news and newspapers as relatively more useful than the Web for keeping up with current issues and events, those respondents who use the Web most frequently find it to be at least comparable and perhaps even superior to traditional news media (Althaus & Tewksbury, 2000).

The purpose of this study is to learn more about the people who are turning to the Internet for news. Three main areas will be explored to get a better understanding of the use of this new news medium and potential impact on traditional sources.

First, who are the people using the Internet as a news source and how do they differ from other news consumers? These questions will be answered in Part II of the results section.

Secondly, are there differences among people depending on how much time they spend online reading news? Does their reliance on the Internet for news affect their use of traditional news sources? These questions will be explored in Part III of the results section which compares heavy and light users of Internet news.

Finally, are Internet news users turning away from traditional sources or adding the new medium to their existing news habits? Are there differences between those people who say they are using print and television news sources less often since going online and those who are loyal to traditional news media? Part IV of the results section answers these questions.

METHODOLOGY

To answer the research questions, a telephone survey was conducted with randomly selected adults in Austin, Texas during February 2000. The Austin area was chosen in part because of the large percentage of people who have access to the Internet. Austin finished fourth in a study of the most wired cities in America (Yahoo Internet Life, 2000a). The phone numbers were first selected using systematic random sampling from the latest telephone directory, then a one was added to the last digit in the number as a way to reach new and/or unlisted numbers. Each call alternated between an adult male or female at that residence. A total of 606 questionnaires were completed which resulted in a margin of error of plus or minus 4 percentage points at the 95 percent confidence level. Graduate and undergraduate students in the College of Communications at the University of Texas at Austin conducted the interviews under the supervision of a School of Journalism professor.

To measure news media use, including newspapers, local TV news, network TV news, cable TV news, and news magazines, all survey participants were asked: "How often do you read/watch/use _________________?" Response choices were never or seldom, one or two days a week, three or four days a week, nearly every day, and every day. In the case of news magazines, the response choices were never or seldom, one week per month, two to three weeks per month, and every week per month.

In Austin Texas, there are five choices for local television news. ABC, CBS, NBC, and Fox affiliated stations all have local news departments. Also, Time-Warner started a 24-hour local cable news operation in the fall of 1999. The city has one prominent daily newspaper, *The Austin American-Statesman*, an alternative weekly, *The Austin Chronicle*, and several smaller niche or neighborhood papers.

In the survey, filter questions were used to target those people who use the Internet. Internet users were asked: "How often do you read news on the Internet?" The response choices were never or seldom, one or two days a week, three or four days a week, nearly every day, and every day.

To find out more specific information about Internet news use, respondents were asked two open-ended questions: "From what Web site do you get most of your news online?" and "What is the main reason that you get news online?" They were also asked a matrix question: "I'm going to read a list of different types of news that can be found on the Internet. Please tell me if you read that type of news often, sometimes or never." The news types in that matrix question were local news, national news, international news, Presidential Election news, weather, sports, and stocks.

In order to find out how online news has affected traditional news media usage, Internet news users were asked: "Since you started getting news online, are you using other sources of news more often, less, often, or about the same as you used to?" This specific wording was used because it matches a question asked periodically by the Pew Research Center so the answers can be compared with national surveys (Pew Research Center, 2000a).

The answers to these questions will be separated into four parts in the results section: the news media landscape, the Internet news users, the differences among heavy and light users of Internet news, and Internet news' effect on traditional news media habits.

RESULTS

Sample Profile

The sample of 606 randomly selected adults in the Austin, Texas area was relatively young, well educated, and white. Two-fifths were under 35 and over half (53%) had college degrees or higher levels of education. Regarding race and ethnicity, 77 percent were white, 12 percent were Hispanic/Latino, 4 percent were African-American and 2 percent were Asian-American. This sample over represents whites and under represents Hispanic/Latinos and African-Americans. In the 2000 Census, 53 percent of Austin's population was white, 31 percent Hispanic/Latino, and 10 percent African-American (Austin Ethnicity, 2001).

CYBERNEWSERS, DESERTERS, AND INCLUDERS

Fifty-two percent of the survey was female and over three-fifths (62%) had household incomes of $50,000. In the area of politics, 32 percent of the respondents said they considered themselves conservatives, 20 percent said liberal, and 48 percent said middle-of-the-road.

New technology is important to the survey respondents as Internet access has caught up to cable TV in availability. Roughly an equal percentage of people had Internet access (79%) as had cable TV (77%).

Focusing in on Internet news use, the survey results are separated into four parts: Part I looks at Internet news as part of the media landscape, Part II profiles Internet news users to see how they differ from other online users and also to find out why they have turned to this new medium, Part III explores the differences between heavy and light Internet news users, and Part IV answers the questions about the effect of Internet news use on traditional news media habits.

PART I: INTERNET NEWS IN THE NEWS MEDIA LANDSCAPE

The emphasis lately has been on the emergence of the Internet as an alternative news medium. But it's important to begin with the overall picture of how often people are using the various media for news. Part I will therefore focus on Internet news' role in the media landscape.

Table 1 shows that local television and newspapers are still the most popular media for news. Close to eight out of ten people say they watch local television news at least once a week. Just under three-quarters of the people read a newspaper at least once a week.

Slightly more than six out of every ten people, or 62 percent, watch NBC, CBS, or ABC's evening newscast once a week while just over half the people surveyed, 52 percent, say they watch news on a cable station at least once a week.

Table 1

News Use Profile

At Least Once A Week	%	N
Local TV News	78	604
Newspapers	73	603
Network TV News	62	602
Cable TV News	52	479
Internet News	**43**	450
News Magazines*	35	593

*for news magazines the response was at least one week a month.

When the medium is the Internet, 43 percent of those surveyed say they log on for news during each week. News magazines are the least utilized in the group, with 35 percent of the people saying they read such a publication at least one week out of the month. When it comes to relying on a medium for news, people still turn to local TV news, newspapers, network TV news and cable TV news more often than they go online for news. But it's important to note that the 43 percent for Internet news includes everyone in the survey, even those who don't have Internet access. As we shall see, close to six out of every ten people with online access are reading news on the Internet at least once a week.

CYBERNEWSERS, DESERTERS, AND INCLUDERS

Since Internet news is becoming a legitimate alternative, we will next focus on the people who are turning to the new medium for information.

PART II: CYBERNEWSER: A PORTRAIT OF A NEW TYPE OF NEWS USER

As shown in Table 1, there are those who get news online at least one day a week and those who don't. Those who get news online at least once a week will be referred to as cybernewsers. By definition, cybernewsers are people who use the Internet as a news medium at least once a week. Internet users who don't get news online will be called non-cybernewsers.

First, we'll look at the percentage of people using the Internet for news and how often they use the new medium. Then we'll compare cybernewsers demographically with non-cybernewsers. Next we'll compare news media usage between cybernewsers and non-cybernewsers. We'll also look into why cybernewsers are using the Internet for news and where they look for news while online.

Respondents with Internet access were asked how often they read news online. According to Table 2, 42 percent never or seldom read news online, but 58 percent read news online at least one day a week. Almost one-quarter of these cybernewsers say they read news online every day.

Table 2

Frequency of Reading News on the Internet
Among Those with Internet Access

	%	
Never/Seldom	42	
1 or 2 Days a Week	18	58% at least once a week
3 or 4 Days a Week	11	
Nearly Daily	6	
Every Day	23	
(n=450)	100	

So who are these cybernewsers? How do people who use the Internet for news differ from those who aren't using the medium for news purposes?

A Comparison of Cybernewsers and Non-Cybernewsers

A larger percentage of men are cybernewsers as compared to women as is shown in Table 3. Seventy percent of men read online news while only 48 percent of women are cybernewsers.

Table 3

Cybernewsers and Gender

	% Men	% Women
Cybernewsers	70	48
Non-Cybernewsers	30	52
	100	100
	(213)	(233)

(N=446), $X^2=21.807$, d.f. = 1, $p<.001$

But we won't find any more clues on how cybernewsers differ from the rest of the Internet users demographically. There is no significant difference between people who are using the Internet for news and those who are not in areas such as political affiliation, age, education, ethnicity, or income.

The only other clue on what makes cybernewsers different than others using the Internet comes on the topic of the economy. Cybernewsers had a more positive view of the economic climate in the first months of 2000. Cybernewsers were more likely (81%) than non-cybernewsers (68%) to say that the economy was better at the time of the survey than four years previous.

Although cybernewsers aren't that different from other Internet users demographically, their involvement with new news source may have some impact on traditional news media. How are cybernewsers using traditional media? Are they turning away from newspapers and television news? Are they news junkies who will use any and all media to satiate their appetite?

First we'll look at cybernewsers and their use of individual news media, and then see if there are any broader news media use patterns.

Cybernewsers' Use Of Traditional News Media

Table 4 shows that cybernewsers haven't abandoned traditional media. On the contrary, the percentage of cybernewsers using other news media is comparable to media use by people who haven't turned to the Internet for news.

Table 4

Cybernewsers and Individual News Media Use**

	%	%	
Once A Week	**Cybernewers**	Non-Cybernewsers	N
Local TV News	77	78	449
Newspaper	74	78	450
Cable TV News*	70	59	363
Network TV News	60	62	449
News Magazines	40	36	445

p=n.s.,

*x^2=4.387, d.f.=1, $p<.05$, Kendall's tau-b, $p<.05$

**Media use means at least once a week, once a month for news magazines

The only significant difference is that cybernewsers as a group watch more news on cable than others do. Seventy percent of cybernewsers are watching cable TV news at least once a week as compared to 59 percent of non-cybernewswers.

Cybernewsers' Reasons For Reading News Online

Cybernewsers and non-cybernewsers may be similar in their use of traditional news media but some reason must be driving cybernewsers to seek out a new medium for news. To find out why cybernewsers are turning to the Internet for news, they were asked the open-ended question: "What is the main reason that you get news online?" As shown in Table 5, the dominant reason cybernewsers go online for news is convenience. Forty-five percent of the cybernewsers said it was convenient or easier to read news online. Fifteen percent gave other reasons; 11 percent said they read news online because it was available when you want it. The least popular reasons for reading news online were wide variety/choice, pass time, news from different countries, information exclusive to the Internet, and access to breaking news.

Table 5

What is the Main Reason You Get News Online?

	%
Convenient/Easier	45
"Other"	15
Available When You Want It	11
Timely/More Up-To-Date	8
Fast/Quick	7
Specific Information	5
More Selective Information	4
Wide Variety/Choice	1
Pass Time	1
News From Different Countries	1
Information Exclusive to Internet	1
Access to Breaking News	1
(N=282)	100

Cybernewsers' Content Choices On The Internet

What kind of news are cybernewsers looking for on the Internet? Cybernewsers were asked a matrix question of seven types of news. They could respond often, sometimes, or never to all of those choices. Table 6 shows the popularity of those content choices with often and sometimes responses combined.

National news was the most popular among cybernewsers with 92 percent saying they looked for national news often or sometimes when using the Internet as a news medium. Weather finished second at 83 percent followed by international news and presidential election news, at 78 percent and 75 percent, respectively.

Table 6

Internet News Content Choices: Often/Sometimes"

	%	N
National News	92	283
Weather	83	281
International News	78	282
Presidential Election News*	75	280
Stocks	62	278
Local News	62	278
Sports	56	279

*survey conducted during month prior to 2000 Texas primary

More than six out of ten cybernewsers are often or sometimes looking for stocks or local news. The least popular topic for cybernewsers was sports, with 56 percent of the respondents saying they looked for this type of news online.

Cybernewsers Web Site Choices for Online News

Since cybernewsers have turned to this new medium for news, where do they find what they are seeking? Respondents were asked: "From what Web site do you get most of your news online?" The diversity of destinations for news on the Internet is highlighted by the fact that Other finished first with 32 percent. (See Table 7.) Some of the responses in the other category included search engines such as Iwon.com and Lycos; high-tech specific sites including Slashdot; and other content-specific sites such as Bloomberg, Capitolwatch, and the Drudge Report.

The Web site mentioned most often by cybernewsers was CNN.com. Two out of ten people said they used the online version of the popular cable network for news. The search engine and e-mail site Yahoo, and the online service America Online were mentioned by 16 percent and 8 percent of the cybernewsers, respectively.

Table 7

Most Popular News Web Sites

	%
"Other"	32
CNN	20
Yahoo	16
America On Line	8
MSNBC	8
"Other" Newspaper Site*	4
Network TV News Site	3
New York Times	2
Excite	2
Austin American-Statesman	2
MSN	2
Local TV Sites	1
(N=277)	100

* Not NY Times or Austin paper

The NBC News and Microsoft cable and Internet partnership, MSNBC, was mentioned by eight percent of the respondents. Other online versions of traditional media, such as New York Times, Austin American-Statesman, and Local TV stations were mentioned by two percent or fewer of the cybernewsers in the study.

Summary: Parts I and II

Cybernewsers are more likely to be men (70%) than women (48%). But other than gender, cybernewsers are similar to non-cybernewsers demographically, with no significant differences in age, income, education, race and ethnicity, and political affiliation. Cybernewsers watch more cable TV news than non-cybernewsers, but the two groups' use of other news media are roughly similar.

The main reason cybernewsers are going online for news is because they find it convenient and easier. They are most interested in national news, weather, international news, and Presidential Election news. Cybernewsers are using a wide variety of Web sites for their news. The most popular Web site, CNN.com, was only mentioned by two out of every ten cybernewsers. Newspaper and Local TV Web sites did not get much attention from the online news users.

Now that we know more about people who are using the Internet for news, the next step is to compare heavy and light cybernewsers. Does the amount of time spent reading online news give us more insight into this new habit?

PART III: A COMPARISON OF HEAVY AND LIGHT CYBERNEWSERS

Are all cybernewsers the same? Is there a difference between those who get news online daily or almost every day and those who read news online less often? To answer these questions, cybernewsers were split into two groups based on how many days a week they go online for news. Those who go online for news nearly every day and every day were labeled heavy cybernewsers while those who only use the Internet for news one to four days a week were labeled light cybernewsers.

Gender

Gender plays an important role in determining the amount of time spent reading news online. Men are almost twice as likely as women to be heavy cybernewsers. Table 8 shows that 63 percent of men are heavy cybernewsers while only 32 percent of women fall into that category.

Table 8

Gender and Amount of Internet News Use

	% Men	% Women
Heavy Cybernewser	63	32
Light Cybernewser	37	68
	100	100
	(148)	(111)

X^2=23.456, d.f.=1, p<.001

Political Ideology

Another significant difference between heavy and light cybernewsers is in the area of political leanings. Respondents were asked if they consider themselves conservatives, liberals, or middle-of-the road. Table 9 shows middle-of-the-road respondents and conservatives were significantly more likely than liberals to be heavy cybernewsers. Fifty-seven percent of middle-of-the-roads and 53 percent of conservatives were heavy cybernewsers compared to 31 percent of the liberals.

Table 9

Political Ideology and Amount of Internet News Use

	% Conservative	% Middle-of-the-Road	% Liberal
Heavy Cybernewser	53	57	31
Light Cybernewser	47	43	69
	100	100	100
	(72)	(122)	(52)

X^2=10.013, d.f.=2, p<.01
Kendall's tau-c, p<.05

Education

The area of education also yielded some interesting, if not significant, information. Table 10 shows that the percentage of heavy cybernewsers increased with level of education. Forty-three percent of the respondents with only a high school education were heavy cybernewsers but that number jumps to 57 percent among people with some graduate school experience.

Table 10

Education Level and Amount of Internet News Use

	% High School Grad	% Some College	% College Grad	% Grad School	N=255
Heavy Cybernewser	43	47	47	57	
Light Cybernewser	57	52	52	43	
	100	100	100	100	
	(21)	(74)	(95)	(65)	

p=n.s.

Heavy and Light Cybernewsers' News Media Usage

By splitting cybernewsers into heavy and light users, we are starting to get a better picture of their other news media use as seen in Table 11. Heavy use of traditional news media is defined as nearly every day or every day. In the case of news magazines, heavy use is defined as every week.

Across all news media, heavy cybernewsers are more likely than light cybernewsers to be heavy consumers of traditional news media. According to Table 11, 52 percent of heavy cybernewsers are also heavy newspaper readers while only 32 percent of light cybernewsers read the paper almost every day.

Table 11

Percentage of Heavy Traditional News Media Use

	% Heavy Cybernewsers	% Light Cybernewsers	N
Newspaper**	52	32	259
Local TV News*	42	32	258
Cable TV News#	40	27	207
Network TV News#	26	22	258
News Magazines***	21	7	255

*X^2=8.675, d.f.=2, $p<.05$
**X^2=11.749, d.f.=2, $p<.01$, Kendall's tau-c, $p<.01$
***X^2=10.388, d.f.=2, $p<.01$, Kendall's tau-c, $p<.01$
p=n.s.

There is also a significant difference between heavy and light cybernewsers and local TV news viewing, with 42 percent of heavy cybernewsers also watching a lot of local news on television while only 32 percent of light cybernewsers rely so heavily on that medium. There are no significant differences in cable and network TV news viewing.

Twenty-one percent of heavy cybernewsers read a news magazine every week while only seven percent of light cybernewsers commit that much time to news magazines.

Switching from individual news media use, we also want to look at heavy and light cybernewsers and their use of news media types as defined by the factor analysis in Part II.

Summary: Part III

While men were significantly more often cybernewsers than women, 70 percent to 48 percent; the gender divide was even greater as Internet news use increased. Men were almost twice as likely as women, 63 percent to 32 percent, to be heavy cybernewsers. Concerning political ideology, conservatives and middle-of-the-road respondents were significantly more likely than liberals to be heavy cybernewsers. Plus, the percentage of heavy cybernewsers increased with the amount of education, from 43 percent for high school graduates up to 57 percent for those with some graduate school experience.

Heavy Cybernewsers are more likely than light cybernewsers to be heavy users of newspapers, local TV news, and news magazines.

Has cybernewsers' use of the Internet for news had an impact on traditional news media? Part IV will answer that question.

CYBERNEWSERS, DESERTERS, AND INCLUDERS

PART IV: THE INTERNET'S IMPACT ON TRADITIONAL NEWS MEDIA USE

To understand the effect that getting news online has on traditional news media, cybernewsers were asked: "Since you started getting news online, are you using other sources of news more often, less often, or about the same as you used to?"

According to Table 12, the majority of cybernewsers, 64 percent, said they haven't changed their old news habits. But more than a quarter (28%) of online news users said they are relying on traditional sources less than before. Five percent say they have actually increased their use of traditional media while also adding online news to their news routine.

Table 12

Cybernewsers Use of Other News Sources

	%*	
More Often	5	N=277
Less Often	28	
Some More, Others Less	1	
About the Same	64	
Don't Know/Refused	1	

*Because of rounding off, the percentages don't add up to 100%

To get a better look at how Internet news use could be affecting traditional news media, we need to look at those people who admit they are cutting back on traditional media and at those who say they have added online news without reducing their reliance on other news sources. Therefore, the responses of some more/others less, and don't know/refused have been filtered out to focus on the most important answers. After re-coding the remaining responses, less often increased to 29 percent of the sample.

For the purpose of this study, cybernewsers who admit they are using other news media less often will be called deserters. Deserters represent 29 percent of cybernewsers. Those who say they are using traditional media the same or more will be identified as includers. Includers represent 71 percent of cybernewsers.

A Comparison of Deserters and Includers

The variable age distinguishes deserters and includers. As shown in Table 13, the 26-34 age group is most likely to desert while the oldest age group is least likely to desert traditional media. Forty-one percent of 26-34 year olds was classified as deserters but only 10 percent of 55+ said they were turning away from traditional media.

By contrast, nine out of ten people in the 55+ group say they are continuing their traditional media habits. The second highest percentage of includers, 75 percent, is amongst the youngest age group, 18-25, followed by 70 percent in the 35-54 group. The smallest percentage of includers, 59 percent, falls in the 26-34 category.

Table 13

Age and Deserters and Includers

	% 18-25	% 26-34	% 35-54	% 55+
Deserters	25	41	30	10
Includers	75	59	70	90
	100	100	100	100
	(68)	(51)	(115)	(29)

N=263
$X^2=9.236$, d.f.=3, $p<.05$

Although age distinguishes deserters and includers, there are no significant differences between the two groups in political beliefs, marital status, education level, ethnicity or income.

Another comparison of deserters and includers is interesting for its lack of significance. In our survey, respondents were asked if television news was more credible, less credible or had the same credibility as five years ago. In Table 14, there are no significant differences in the credibility answers between deserters and includers. Twenty-six percent of deserters and 23 percent of includers think television news is more credible now than five years ago. Deserters and includers also have similar percentages of their groups that think television news is less credible, 34 percent and 39 percent respectively.

Table 14

Deserters and Includers View of TV News Credibility

	% Deserters	% Includers	% Total Survey
More Credible	26	23	30
Less Credible	34	39	34
No Change	40	38	36
	100	100	100
p=n.s., N=254			n=557

The total percentages are also included to show how closely deserters and includers' answers for the television news credibility questions mirrored the survey as whole.

We already know that deserters say they are using traditional news sources less since they have become cybernewsers. Plus, we know that includers say they've increased their news consumption by adding Internet news into their mix of news media sources. But it's also important to know the extent to which deserters and includers use other news sources.

A Comparison of Deserters and Includers and News Media Usage

Table 15 shows that deserters are less likely than includers to be heavy users of traditional news media. Heavy use is defined as using that medium nearly every day or every day. Only 24 percent of deserters are heavy Local TV News viewers while four out of ten includers have the same habit. The difference is even greater when the medium is newspapers: only 27 percent of deserters are heavy newspapers users while 47 percent of includers are heavy newspaper readers.

There is no statistically significant difference between deserters and includers' heavy use of cable TV news, network TV news, or news magazines.

Table 15

A Comparison of Deserters and Includers and Heavy News Media Usage

Heavy Use	% Deserters	% Includers	N
Local TV News*	24	40	270
Newspaper**	27	47	270
Cable TV News#	30	35	219
Network TV News#	16	24	269
News Magazines#	9	16	267
Internet News***	60	41	268

*X^2=7.143, d.f.=2, $p<.05$, Kendall's tau-c, $p<.01$, Somers' d, $p<.01$

**X^2=11.294, d.f.=2, $p<.01$, Kendall's tau-c, $p\leq.001$

***X^2=8.802, d.f.=2, $p<.05$, Kendall's tau-c, $p<.01$

p=n.s.

For comparison, Internet news is included in Table 15 along with the traditional news media. With this medium the heavy usage percentages are reversed. Deserters are significantly more likely to be heavy users of online news than includers, 60 percent to 41 percent.

Summary: Part IV

Almost three out of every ten cybernewsers (29%) say they are using traditional news media less often than before they started going online for news. These respondents are called deserters while those cybernewsers who say they are using traditional sources the same or more often are called includers.

Unlike earlier comparisons, there is no gender difference between deserters and includers. But when it comes to age, the highest percentage of deserters (41%) are 26-34 years old while the smallest group (10%) are 55+ years old. Deserters and includers are not significantly different in other demographic characteristics.

Deserters are significantly less likely than includers to be heavy users of Newspapers and Local TV News. At the same time, deserters are far more likely (60%) than includers (41%) to be heavy users of Internet News.

DISCUSSION

Slightly more than three-quarters of the respondents watch local television news and 73 percent read a newspaper at least once a week. More than three-fifths watch network TV news and 52 percent watch cable TV news. At the same time, more than four out of every ten respondents also are using their computer to find out what's going on in the world.

Reading news on the Internet is no longer a novelty hobby or an activity confined to a specific group of people. Cybernewsers, the audience segment that reads news online, are much like everyone else demographically. They aren't significantly younger or older, or richer or poorer, and they don't have more or less education, or even dramatically different media habits. For those looking for an easily defined group of people using the Internet for news, these results might be disappointing. But there are a few characteristics that separate cybernewsers from others going online. Men are more likely than women to be cybernewsers. Plus, cybernewsers are heavier cable TV news viewers than non-cybernewsers.

Cybernewsers say they are going online most often for national news, weather, and international news but they don't often agree on a favorite Web site for news. CNN.com was the most popular but it was named by only two out of ten cybernewsers. They say the Internet is a good news medium because going online is convenient and easier.

When we really start to see differences is when we explore the different behaviors amongst the cybernewsers themselves. There are definite differences between heavy and light users of Internet news. Plus, those cybernewsers who say they are turning away from traditional news sources, deserters, have characteristics significantly different from those who are loyal to old news habits, the includers.

Cybernewsers

The only significant demographic difference between cybernewsers and others is that they are much more likely to be men. Seventy percent of the men are cybernewsers while only 48 percent of women are going online for news. This trait has been found amongst Internet and computer users in previous research on the national level (Stempel, Hargrove, & Bernt 2000, Pew, 2000b) and on the local level (Austin Survey, 1999). But a U.S. Government report concludes that the disparity between men and women and

Internet use has disappeared (U.S. Department of Commerce, 2000). Cybernewsers also had a more positive view of the U.S. economy in early 2000 than others, believing it was in better shape than four years previous.

At the same time that the Internet is gaining acceptance as a news medium, traditional news sources are losing their strong grip on the audience for current event information. Stempel, Hargrove, & Bernt (2000) found a significant drop in regular use of local and network TV news, newspapers, and news magazines from 1995 to 1999 while at the same time interest in the Internet and on-line services increased dramatically. Numerous other studies have documented the drop in usage of various traditional news sources as the competition increases (Goldblatt, 1997; Consoli, 1998; Lafayette, 1999).

Cybernewsers' use of local TV news, network TV news, newspapers, and news magazines isn't any different from those not looking for news online. This goes against the fixed-time version of the relative constancy theory that predicts that adding a new medium means cutting back on another (McCombs, 1972; Kaplan, 1978).

In fact, the opposite effect is evident with one news source. Cybernewsers are more likely than non-cybernewsers to watch cable TV news at least once a week. These findings are in line with some relative constancy studies that show the electronic/computer era has resulted in people spending more time with the media (Grotta & Newsom, 1982; Wood & O'Hare, 1991; Glascock, 1993). The new media options don't appear to be crowding out traditional media:

> …adopters of new information technologies do not necessarily give up more traditional communication media in order to adopt the new communications forms as might be expected from the constancy hypothesis (Schweitzer, 1991).

Cybernewsers' heavy use of cable TV news and also the fact that they aren't using other news sources significantly less than non-Internet news users also fits into the diffusion of innovations idea that early adopters are often heavy users of a new idea or technology before they cut back to their traditional usage patterns (Reagan, 1989). On the other hand, Lindstrom (1997) argues that the computer is complicated enough to learn that it could be one innovation that results in people using it more often later after making it through the steep learning curve.

The lack of a cutback in traditional news media is in line with studies (Robinson & Jeffres, 1979; Althaus & Tewksbury, 2000) that show news media are supplementary instead of competitive. People who use one medium tend to use others for the information. Plus, uses and gratifications research shows that people who receive a specific gratification from one medium will seek it from other media as well (Becker, 1979).

Looking at why people are using the Internet for news, 45 percent said they found online news convenient and easier. This reason was also most popular in a national survey of election news on the Internet (Pew, 2000b). With the catch-all answer "other" coming in second with 15 percent of the responses, the novelty of this news medium is apparent because of the lack of consensus on the attributes of this news source.

It's important to note that some of the biggest advantages the Internet has over traditional news media weren't mentioned by many cybernewsers. Access to breaking news, information exclusive to the Internet, news from different countries, and wide variety/choice each received only one percent of the responses in the open-ended question. For those who are hoping the Internet will expose us to a wider variety of news and interpretations, it's not clear yet that people are taking advantage of that attribute.

Even with some of the low scores, you can see some clues in the answers with words like specific, exclusive, and selective, which show that people are looking for news topics that they might not be finding in other locations. Words and phrases like timely, fast, and breaking news reveal an audience looking for the immediacy of the Internet which potentially can be updated continuously. These choices set up a useful typology for measuring the effectiveness of a news Web site.

When cybernewsers were asked about specific Internet news content, 92 percent picked national news. Other top choices included weather, international news, and presidential election news. Matching up content choices with other research is difficult because each study seems to use its own typology of content choices. But weather was mentioned as the top content choice in another study (Pew, 1998b). Surprisingly, almost eight out of ten cybernewsers chose international news as an important content choice. But when those same people were asked why they used the Internet for news, only one percent of the respondents mentioned news from other countries. This is a content area that needs to be studied in more detail. International news rarely rates high as a content choice for American news consumers. The lack of international news in print and on television might be forcing the people who want that information to turn to the Internet. Therefore, international news could be an important niche for online news sources to fill a need not being realized by traditional news media.

Cybernewsers are also very diverse in their top choices for news Web sites. The wide variety of answers given to the question of where respondents get most of their online news resulted in "other" being the top choice. The most mentioned Web site, CNN.com, was only picked by two out of every ten cybernewsers. But CNN.com has also fared well in other surveys of Internet news sites (Pew 2000b, Hot 100, 2000).

Looking closer at the myriad of choices for news Web sites reveals two types of sites getting the most attention: Web versions of traditional news media and online services/search engines. With respondents naming sites such as CNN, MSNBC, and the New York Times, it is apparent that name recognition and reputation are helping these organizations find a niche on the Internet which has been found in other studies as well (Pew, 1998b; Pew, 2000b). The perception of online services and search engines as news Web sites is interesting and also troubling for those expecting the Internet to bring about a diversity of voices. Respondents mentioned sites such as Yahoo, AOL, Excite, and MSN as important sites for news. But for the most part, these Web sites aren't news gathering organizations. Instead, they create an index with links to other news sources. Even though these Web sites don't do any of the reporting, they are getting credit as a destination news Web site. So instead of offering different journalists and/or perspectives, these sites are often sending the users back to Web versions of traditional news sources.

Heavy And Light Cybernewsers

While cybernewsers had few demographic and news use differences from non-cybernewsers, the distinctions become more apparent when we look at the amount of time spent online reading news. Men (63%) are almost twice as likely as women (32%) to be heavy cybernewsers. Political views also are significantly different depending on the amount of time spent online. Middle-of-the-road and conservatives, 57 and 53 percent respectively, are much more likely to be heavy cybernewsers than liberals, at 31 percent.

While the numbers aren't significant, it's interesting to note that the more education a person receives, the more likely that person will be a heavy cybernewser. Forty-three percent of the people with a high school diploma are heavy cybernewsers increasing to 57 percent of people with at least some graduate school experience.

Heavy cybernewsers seem to have an insatiable appetite for news. Not only are they going online almost every day, they watch more news on television and read more news on paper than light cybernewsers. Once again, the limited-time version of the relative constancy theory doesn't hold up at all in the use of traditional news media. Heavy cybernewsers are significantly more likely than light cybernewsers to be watching local TV news, reading newspapers and newsmagazines on a nearly everyday or everyday basis. The heavy cybernewsers reliance on all news media is also apparent when compared with broader news media patterns. Heavy cybernewsers are significantly more likely to spend more time with print news than light cybernewsers which has been found in other research (Schweitzer, 1991; Perse & Dunn, 1998). Instead of cutting back, heavy cybernewsers rely on traditional news sources more than those only using the Internet for news a few days a week. These results fit with other studies that have found that the relative constancy theory doesn't work (1) when people are seeking out new information and (2) when the introduction of computers, cable, and videocassette recorders caused a surge in media spending and usage (Grotta & Newsom, 1982; Dupagne, 1994; Stempel, Hargrove & Bernt, 2000). More specifically, some research backs up the idea that Internet users are heavier users of other media than those not online (Goldblatt, 1997).

Deserters And Includers

Does Internet news use mean a reduction in use of other news media or are cybernewsers still keeping their old news habits? The answer is there are two types of cybernewsers: deserters and includers.

Just what effect Internet news is having on traditional news sources is a growing debate. In our study, 29 percent of the cybernewsers say they are turning away from news on the page and on television. These deserters are a major problem according to some recent research (Pew 1999, 2000a; Magid, 1999). The other 71 percent say they are using traditional sources the same or even more often since turning to the Internet. Includers are the important group according to research that concludes the Internet is a supplement to traditional news media (Althaus & Tewksbury, 2000; Stempel, Hargrove, & Bernt, 2000).

The same question about the impact on traditional sources has been used by the Pew Research Center in national surveys since 1995. In a Spring 2000 survey, 21 percent of the people considered themselves deserters while 79 percent were includers. This is a smaller percentage of deserters when compared to our survey but still much higher than the 13 percent of deserters in a Pew national survey back in 1995 (Pew Research Center, 2000a). These results are definitely a signal that the Internet is gradually pulling people away from their old news media habits.

Demographically, age is the only significant difference between deserters and includers. The largest percentages of deserters are in the 26-34 and 35-54 age groups, 41 and 30 percent respectively. Newspaper and television news executives have a right to be nervous because the 26-34 and 35-54 cohorts are two of the most important age groups to the advertisers. Includers are more likely to be found in the youngest and oldest age groups. Ninety percent of people older than 54 consider themselves includers while 75 percent of people 18-25 say they haven't cut back on traditional news media sources. The youngest age group answer is interesting since those people aren't considered loyal users of traditional news media. Their response could mean that they aren't turning away from traditional sources because they never really relied on those sources in the first place. The 18-25 group needs further study to see if their news use habits are different from previous generations of this age group.

It's interesting to note that there's no significant difference between deserters and includers on the issue of television news credibility. Some believe that people are turning to the Internet because they don't trust traditional news media anymore. In a poll concerning news media believability, people consistently ranked the online versions of traditional news sources such as CNN, ABC, and USA Today as more believable than the original televised or printed edition. (Pew 2000a). Our survey only included television news, but the people turning away from traditional news weren't any more likely to doubt those sources than people who are still regular consumers. This is in line with a Gallup poll in 1998 in which people said that of all the news media, they had the most trust in various forms of television news (Newport & Saad, 1998).

What kind of impact are deserters and includers having on traditional news media? We would expect to find significant differences between deserters and includers in their use of traditional news sources. By definition, deserters say they are using these sources less often than before. In the areas of local TV news, and newspapers, deserters are less likely than includers to be heavy users. This fits into the basic time constraint idea of relative constancy (Webster, 1984). But in the cases of cable TV news, network TV news, and news magazines, there was no significant difference in usage between deserters and includers. Since we don't know the extent of deserters' use of traditional news sources before the Internet, we can't make any definite statements about what sources have suffered the most with the news media time shifting online. For more of a causal relationship, future studies should focus on a longitudinal look at media use to track specific changes in news sources.

We also know that deserters are far more likely to be heavy users of Internet news than includers, 60 percent to 41 percent. Plus, the percentage of deserters who are heavy Internet news user, 60 percent, is more than double the percentage for any other news medium. So deserters have definitely found an important place for news on the Internet. Therefore, comparing the two groups, deserters are more likely to be heavy cybernewsers, while includers are more likely to be light cybernewsers. On the surface this observation is intuitive because the people who say they are turning away from traditional news media, deserters, are also the ones who are most involved in Internet news, heavy cybernewsers. But at the same time, there are discrepancies in the linking of these two groups. Deserters are less likely to use newspapers and local TV news but at the same time, heavy cybernewsers are more likely to read newspapers and news magazines and watch local TV news. As more people go online and Internet users become better versed in the new medium, we will need to study the cybernewsers closely for signals about how people might be changing how they get their news. Referring back to the news habit model in Figure 1, the first possible impediment to adding the Internet to a news routine is no longer a problem for almost eight out of every ten people (79%) in the survey because they have access to the technology. So considering the diffusion of innovation theory, Internet access has spread through the innovators, the early adopters, the early majority, and the late majority and is not far from the final laggards group. But in order to add the Internet to a news habit, that medium has to fulfill a need not being met by other media according to the uses and gratifications approach. More than four out of ten cybernewsers talk about the convenience of online news. Plus they are looking for national and international news as well as weather information. But at this point, the need is being filled by a variety of Web sites since the most popular site, CNN.com, was only mentioned by two out of every ten people.

According to the news habit model in Figure 1, even if people have Internet access, and do find a need fulfilled by online news, they still have to make the decision on whether or not Internet news is important enough to add to a limited amount of time dedicated for reading or viewing news. According to the limited-time version of the relative constancy theory, people have to make serious choices if they want to add a new medium. Usually, adding a new source for news should mean less time spent with traditional sources. These results show that relative constancy does not always work. Cybernewsers are using traditional sources as much or more than non-cybernewsers. Plus, the more Internet news people read, the heavier reliance those people have on printed and televised news as compared to those not spending so much time reading news online. These findings go against the limited time concept of relative constancy. But at the same time, there is a significant group of cybernewsers, the deserters, who admit they are turning away from traditional sources. This group fits the relative constancy theory because it is substituting time spent with traditional news sources with time spent reading news online. We can't say it is an even trade, but these people admit they have cut down their traditional news habit since going online for news.

Since 43 percent of the survey population say they are getting news online at least once a week, that means more than four out of every ten people have a revised news habit, as shown in Figure 1, because of Internet news use. Future studies will need to focus on that revised news habit to try and find out more clearly how the different media make up the habit and what media are fulfilling what specific news needs.

The Future

The choice of location for this survey could also have a bearing on the meaning of the results. In a recent study, Austin, Texas was ranked fourth in a survey of the most wired cities in America. (Yahoo Internet Life, 2000a). The survey took into account the percentage of people using the Internet from home and at work, the number of computers with access to the Internet, and number of Web sites devoted to the city, and other factors. In the same survey, Austin tied for first in the country for percentage of adults using the Internet at home. In our survey, 79% of the people had access to the Internet (Austin Survey, 2000) while a government report put the nationwide percent of Internet access in August 2000 at 42% (U.S. Dept. of Commerce, 2000). In addition to Internet access, Austin is also one of the top cities for the high tech industry including plants and/or home offices for Dell Computers, Advanced Micro Devices, Vignette, and Motorola. Because of these factors, it could be argued that Internet research in this community could be a predictor of nationwide trends in the future (Chyi & Lasorsa, 1999). If these results give us a glimpse into what we can expect from Internet news users in the coming years, the way we will be getting our news will be changing.

At the same time, how people are using the Internet in Austin, Texas might not apply to a larger population for the very reasons listed above. Since so many people are online and with such a high concentration of Internet companies and workers, Austin might always skew higher in various Internet activities than people in other parts of the country.

The U.S. Government reports that 116.5 million Americans went online in August 2000, a 31% jump in fewer than two years. Internet popularity shows no sign of slowing down. At the same time, the percentage of people using the Internet for news keeps increasing as well (U.S. Dept. of Commerce, 2000). Internet news users, or cybernewsers, are becoming important people to study.

This is one of the first studies to treat Internet news use as a distinct habit and separate from sending e-mail, looking for a job, or doing research. By separating out news use online, we have a better idea why the Internet is becoming a popular news medium, including the convenience of the technology and the attention to certain content areas. Since Internet news use is already more popular than reading news magazines and is gaining on cable and network news viewing, news media owners should be paying close attention to cybernewsers. In the past several months, news organizations have taken the short-sighted approach of cutting back their Internet news operations because of a lack of profit. Instead, those owners should be aggressively looking for ways to get through to the cybernewsers, since online news users are growing in number and definitely are looking for news information they aren't getting in print or on television.

This is also one of the first studies to relate Internet news use to overall news habits and the possible effects on traditional news media usage. The results are both troubling and possibly encouraging for people involved in traditional news media such as newspapers and television news. On the whole, cybernewsers aren't turning away from traditional news media sources. In fact, the more time spent reading online news is linked to heavier use of traditional news media as compared to those not getting news online. But there is another important sub-group of cybernewsers, the deserters, who admit they are using traditional sources less often since discovering Internet news. We need to keep focusing on these people to understand the news media landscape of the 21st century. All three approaches, diffusion of innovations, relative constancy, and uses and gratifications, will help explain the changes in where people are getting their news.

We definitely need to know more about cybernewsers. They are using the Internet for news because they are looking for and finding something they can't get from newspapers or television. More specifically, we need to focus on the deserters. A longtitudinal study would be helpful to find out if these people are turning away from traditional sources or if they never relied on newspapers or television news.

The habits of cybernewsers and especially their use of traditional news media are critical for the future of traditional news sources such as local television news and newspapers. At this point, cybernewsers appear to be news junkies since they are combining Internet news with an even heavier reliance on traditional news sources than non-cybernewsers. But at the same time, more than a quarter of all cybernewsers admit they are already turning away from traditional sources. These deserters should be a major concern, especially for newspapers and local television stations. Deserters are already less likely than includers to use those two sources. Cybernewsers, and especially the sub-group of deserters, will be the key to the extent of the change of the news media landscape as the Internet fights for its place in the hierarchy of news choices.

BIBLIOGRAPHY

100 Hot. (2000, October). *Top-Ranked Web Sites.* [On-line report.] <http://www.100hot.com/directory/100hot/>

Abelman, R., (1987). Religious Television Uses and Gratifications. *Journal of Broadcasting & Electronic Media,* 31(3), 293-307.

Abelman, R. (1989). "PTL Club" Viewer Uses and Gratifications. *Communication Quarterly,* 37(1), 54-66.

Althaus, S L. & Tewksbury, D., (2000). Patterns of Internet and Traditional News Media Use in a Networked Community. *Political Communication,* 17, 21-25.

Austin Ethnicity, (2001). Census 2000 Austin Ethnicity and Race. Available: http://www.ci.austin.tx.us/census/ethnicity.htm.

Austin Survey, (Fall 1999). School of Journalism, University of Texas at Austin.

Austin Survey, (Spring 2000). School of Journalism, University of Texas at Austin.

Babrow, A.S., (1987). Student Motives for Watching Soap Operas. *Journal of Broadcasting & Electronic Media,* 31(3), 309-321.

Barringer, F., (1998). Internet News Fanatics Prefer Television Sites. *The New York Times,* 30 November 1998.

Becker, L.B., (1979). Measurement of Gratifications. *Communication Research,* 6(1), 54-73.

Berelson, B., (1949). What "Missing The Newspaper" Means. *Communications Research, 1948-1949,* eds. Paul F. Lazarsfeld and Frank N. Stanton. New York: Harper and Brothers.

Blumler, J.G., (1979). The Role of Theory in Uses and Gratifications Studies. *Communication Research,* 6(1), 9-36.

Blumler, J.G. & Katz, E. (eds.) (1974). *The Uses of Mass Communications: Current Perspectives on Gratification Research,* Beverly Hills, CA: Sage.

Braun, E, (1998). How The Net Will Impact TV News. *Electronic Media* 21 September.

Bromley, R. & Bowles, D., (1995). Impact of Internet on use of traditional news media. *Newspaper Research Journal,* 16(2), 14-27.

"CBS News," (2001) *CBS-TV Website* <http://www.cbs.com/>

Chaffee, S. & Choe, S.Y., (1981). Newspaper Reading in Longitudinal Perspective: Beyond Structural Constraints. *Journalism Quarterly,* 58, 201-211.

Chyi, H.I. & Lasorsa, D., (1999). Access, use and preferences for online newspapers. *Newspaper Research Journal,* 20(4), 2-13.

"CNN Online," (2001). *CNN Website* <http://www.cnn.com/>

Coffey, S. & Stipp, H., (1997). The Interactions Between Computer and Television Usage. *Journal of Advertising Research,* 37(2), 61-67.

Consoli, J. (1998). The 11.8-Hour Diet; Survey: Media Consumption is Up, But TV Viewing Plummets. *MediaWeek* 8(16) 20 April 1998, 9.

De Fleur, M. L., (1988) Diffusing Information. *Social Science and Modern Society,* 25.1

Demers, D.P., (1994). Relative Constancy Hypothesis, Structural Pluralism, and National Advertising Expenditures. *The Journal of Media Economics.* 7(4), 31-48.

Dizard, W., (2000) *Old Media New Media: Mass Communications in the Information Age* New York: Longman.

Dupagne, M., (1994). Testing the Relative Constancy of Mass Media Expenditures in the United Kingdom. *The Journal of Media Economics.* 7(3), 1-14.

Dutton, W.H., Rogers, E.M., & Jun, S.H., (1987). Diffusion and Social Impact of Personal Computers. *Communication Research.* 14(2), 219-250.

Elliott, W.R., & Rosenberg, W.L., (1987). The 1985 Philadelphia Newspaper Strike: A Uses and Gratifications Study. *Journalism Quarterly,* 64, Winter, 679-687.

Faber, R.J., Reese, S.D., & Steeves, H.L., (1985). Spending Time with the News Media: The Relationship between Reliance and Use. *Journal of Broadcasting & Electronic Media.* 29(4), 445-450.

Ferguson, D.A. & Perse, E.M. (2000). The World Wide Web as a Functional Alternative to Television. *Journal of Broadcasting and Electronic Media,* 44(2), 155-174.

Furno-Lamude, D. & Anderson, J., (1992). The Uses and Gratifications of Rerun Viewing. *Journalism Quarterly,* 69(2), 362-372.

Gantz, W., (1978). How Uses and Gratifications Affect Recall of Television News. *Journalism Quarterly,* 55, 664-672, 681.

Glascock, J., (1993). Effect of Cable Television on Advertiser and Consumer Spending on Mass Media, 1978-1990. *Journalism Quarterly.* 70(3), 509-517.

Goldblatt, H., (1997). Geeks don't watch TV? *Fortune.* 136(6), 29 September 1997, p. 36.

Goldstein, A., (2000). Dallas, Austin vie for high-tech title. Cities see a boom in Internet businesses. *Dallas Morning News.* 19 March 2000.

Grotta, G.L. & Newsom D., (1982). How Does Cable Television in the Home Relate to Other Media Use Patterns? *Journalism Quarterly.* 59(Winter), 588-591,609.

Ha, L. & James, E.L., (1998). Interactivity Re-Examined: A Baseline Analysis of Early Business Web Sites. *Journal of Broadcasting & Electronic Media,* 42, 457-474.

Heeter, C. & Greenberg, B., (1985). Cable and Program Choice. *Selective Exposure to Communication*, eds. Dolf Zillman and Jennings Bryant. Hillsdale, NJ: Lawrence Erlbaum Associates.

Jeffres, L.W., (1978). Cable TV and Viewer Selectivity. *Journal of Broadcasting,* 22(2) 167-177.

Kaplan, S.J., (1978). The Impact of Cable Television Services on the Use of Competing Media. *Journal of Broadcasting.* 22(2), 155-165.

Katz, E., (1979). The Uses of Becker, Blumler, and Swanson. *Communication Research,* 6(1), 74-83.

Kiernan, V. & Levy, M.R. (1999). Competition Among Broadcast-Related Web Sites. *Journal of Broadcasting and Electronic Media*, 43(2), 271-279.

Kim, J.O. & Mueller, C., (1978a). *Introduction to Factor Analysis: What It Is and How to Do It.* Beverly Hills, CA: Sage.

Kim, J.O. & Mueller, C., (1978b) *Factor Analysis: Statistical Methods and Practical Issues.* Beverly Hills, CA: Sage.

Lafayette, J., (1999). American Viewers are Bored, Study Says. *Electronic Media* 18 January 1999.

Larsen, T. J., & McGuire E. (eds.) (1998). *Information Systems Innovation and Diffusion: Issues and Directions* Hershey, PA: Idea Group.

Levy, M. R., (1978a) The Audience Experience With Television News. *Journalism Monograph* 55.

Levy, M.R., (1978b). Television News Uses: A Cross-National Comparison. *Journalism Quarterly*, 55, 334-337.

Levy, M.R. & Windahl, S., (1984). Audience Activity and Gratifications: A Conceptual Clarification and Exploration. *Communication Research*, 11(1), 51-78.

Lieberman, D., (1999). Study: TV, Radio Stations Lag in Creating Local Web Content. *USA Today*. 25 October 1999.

Lindstrom, P.B., (1997). The Internet: Nielsen's Longitudinal Research on Behavioral Changes in Use of This Counterintuitive Medium. *The Journal of Media Economics*. (10)2, 35-40.

Lowery, S. A, & DeFleur, M.L.,(1995). *Milestones in Mass Communication Research: Media Effects* White Plains, NY: Longman.

Frank Magid Associates, (1999). Local TV News in the .Com Age: Impact of the Internet on TV News, RTNDA 1999 Executive Summary.

Mahajan, V., & Wind Y., (eds), (1986). *Innovation Diffusion Models Of New Product Acceptance: Econometrics and Management Sciences.* Ser. 5. Cambridge, MA: Ballinger.

Marshall, A., (1998). Old News Buys Into a New Audience; The Advance of the Internet Signals the End of TV News as We Know It. *The Independent* [London] 16 June 1998.

McCombs, M.E., (1972). Mass Media in the Marketplace. *Journalism Monographs*. 24, 1-102.

McCombs, M.E. & Eyal, C.H., (1980). Spending on Mass Media. *Journal of Communication*. 30(Winter), 153-158.

McCombs, M.E. & Nolan, J., (1992). The Relative Constancy Approach to Consumer Spending for Media. *Journal of Media Economics*. 5(2), 43-52.

McDonald, D.G., & Glynn, C.J., (1984). The Stability of Media Gratifications. *Journalism Quarterly*, 61, Autumn, 542-549, 741.

McManus, J.H., (1994). *Market-Driven Journalism: Let the Citizen Beware?* Thousand Oaks, CA: Sage.

McMillan, S., (2000). The Microscope and the Moving Target: The Challenge of Applying Content Analysis to the World Wide Web. *Journalism & Mass Communication Quarterly*, 77(1), 80-98.

McQuail, D., Blumler J.G., & Brown, J.R., (1972) The Television Audience: A Revised Perspective, in D. McQuail (Ed), *Sociology of Mass Communications*. Middlesex, England: Penguin.

NBC News. *MSNBC Website*. <http://www.msnbc.com>

Newport, F. & Saad L., (1998). A Matter of Trust: News Sources Americans Prefer. *American Journalism Review* (20) 6 July-August 1998, 30.

Newspapers Stable Despite Gains By Cable TV, Internet. *The Commercial Appeal* [Memphis, TN] 9 June 1998.

Nielsen Media Research, (1999). TV Viewing in Internet Households: A Report by Nielsen Media Research, National People Meter data, May 1999.

Palmgreen, P., (1984). Uses and Gratifications: A Theoretical Perspective, in R. Bostrom & B. Westley (Eds.), *Communication Yearbook 8*. Beverly Hills, CA: Sage.

Palmgreen, P., & Rayburn, J.D., (1979). Uses and Gratifications and Exposure to Public Television. *Communication Research*, 6(2) 155-180.

Papacharissi, Z & Rubin, A., (2000). Predictors of Internet Use. *Journal of Broadcasting & Electronic Media*, 44(2), 175-196.

Payne, G.A., Severn, J.J., & Dozier, D.M., (1988). Uses and Gratifications Motives as Indicators of Magazine Readership. *Journalism Quarterly*, 65(4), 909-913, 959.

Perse, E.M, & Dunn, D.G. (1998). The Utility of Home Computers and Media Use: Implications of Multimedia and Connectivity, *Journal of Broadcasting and Electronic Media*, 42(4), 435-456.

Pew Research Center, (1998a) Internet News Takes Off: Event-Driven News Audiences. [On-line Report] http://www.people.press.org

Pew Research Center, (1998b). Presidential Moral Authority Survey. [On-line Report] http://www.people.press.org/

Pew Research Center, (1998c). The Internet News Audience Goes Ordinary. [On-line Report] http://www.people-press.org/content

Pew Research Center, (2000a). Internet Sapping Broadcast News Audience. [On-line Report] http://www.people-press.org/media00sec2.htm

Pew Research Center, (2000b). Internet Election News Audience Seeks Convenience, Familiar Names. [On-line Report] http://www.people-press.org/online00rpt.htm.

Poindexter, P.M, & McCombs, M.E., (2000). *Research in Mass Communication: A Practical Guide*. Bedford/St. Martin's.

Potter, W.J, (1996). *An Analysis of Thinking and Research About Qualitative Methods*, Mahwah, NJ; Lawrence Erlbaum, 63.

Pronovost, G., (1998a) Leisure Time. *Current Sociology*. (46) 3 July 1998.

Pronovost, G., (1998b) The Social Uses of the Mass Media in Leisure Time. *Current Sociology* (46) 3 July 1998.

Reagan, J., (1989). New Technologies and News Use: Adopters vs. Nonadopters. *Journalism Quarterly*, 66(Winter), 871-875, 887.

Robinson, J.P., (1981). Measuring Media Influence: Television and Leisure Time: A New Scenario. *Journal of Communication*. 31(1), 120-130.

Robinson J.P. & Jeffres, L.W., (1979). The Changing Role of Newspapers in the Age of Television. *Journalism Monograph*. 63, 1-31.

Rogers, E. M., (1995). *Diffusion Of Innovations*. Fourth Edition. New York: The Free Press.

Rubin, A.M., (1983). Television Uses and Gratifications: The Interactions of Viewing Patterns and Motivations. *Journal of Broadcasting*. 27(1)7-51.

Rubin, A.M., & Perse, E.M., (1987). Audience Activity and Television News Gratifications. *Communication Research*, 14(1), 58-84.

Ruggiero, T., (2000). Uses and Gratifications Theory in the 21st Century. *Mass Communication & Society*, 3(1), 3-37.

Sahim, H., & Robinson, J.P., (1982). Beyond the Realm of Necessity: Television and the Colonization of Leisure. In D.C. Whitney & E. Wartella (Eds.) *Mass Communication Review Yearkbook, Volume 3*. Beverly Hills, CA: Sage.

Schweitzer, J., (1991). Personal Computer and Media Use. *Journalism Quarterly*, 68, 689-697.

Severin, W.J. & Tankard, J.W., (1997). *Communication Theories: Origins, Methods, and Uses in the Mass Media, 4th Edition*. New York: Longman.

Son, J. & McCombs, M.E., (1993). A Look at the Constancy Principle Under Changing Market Conditions. *Journal of Media Economics*. 6(2), 23-36.

Stempel, G.H. & Hargrove, T., (1996). Mass Media Audiences in a Changing Media Environment. *Journalism & Mass Communication Quarterly*. 73(3), 549-558.

Stempel, G.H., Hargrove, T., & Bernt, J., (2000). Relation of Growth of Use of the Internet to Changes in Media Use from 1995 to 1999. *Journalism and Mass Communication Quarterly*, 77(1), 71-79.

Swanson, D.L., (1979a). The Continuing Evolution of the Uses and Gratifications Approach. *Communication Research*, 6(1), 3-7.

Swanson, D.L., (1979b). Political Communication Research and the Uses and Gratifications Model: A Critique. *Communication Research*, 6(1), 37-53.

UCLA Center for Communication Policy, (2000). Surveying the Digital Future: The UCLA Internet Report. [On-line Report] http://www.ccp.ucla.edu

U.S. Department of Commerce. (2000, October). *Falling Through the Net: Toward Digital Inclusion*. [On-line Report] Economic & Statistics Administration, National Telecommunications and Information Administration. http://www.ecommerce.gov .

Weaver, D., (1981). Basic Statistical Tools. In G. Stempel & B. Westley (Eds.) *Research Methods in Mass Communication*. Englewood Cliffs, NJ: Prentice-Hall, Inc.

Webster, J.G., (1984). Cable Television's Impact on Audience for Local News. *Journalism Quarterly*. 61(Summer), 419-422.

Weinstein, S., (1998). A Matter of Snooze Or The News. *Los Angeles Times*. 30 July 1998.

Weir, T., (1999). Innovators or news hounds? A Study of early adopters of the electronic newspaper. *Newspaper Research Journal,* 20(4), 62-81.

Wicks, R.H. (1989). Segmenting Broadcast News Audiences In the New Media Environment. *Journalism Quarterly,* 66, 383-390.

Wood, W.C., (1986). Consumer Spending on the Mass Media: The Principle of Relative Constancy Reconsidered. *Journal of Communication.* 36(Spring), 39-51.

Wood, W.C., & O'Hare, S.L., (1991). Paying for the Video Revolution: Consumer Spending on the Mass Media. *Journal of Communication.* 41(1),24-30.

Woodward, C., (1998). Cable TV, Internet Gaining Popularity As News Sources. *The Associated Press.* 8 June 1998, AM Cycle.

Yahoo Internet Life, (2000a). America's 50 Most Wired Cities. [On-line Report] http://www.zdnet.com/yil/content/mag/0003/rankings.html

Yahoo Internet Life, (2000b). America's Most Wired Colleges. [On-line Report] http://www.zdnet.com/yil/content/college/college2000/

Zoglin, R., (1996). The News Wars. *Time* 21 October 1996.

The Pros and Cons of Using a Media Web Site to Publish Subpoenaed Information

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Abstract

The Pros and Cons of Using a Media Web Site to Publish Subpoenaed Information

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In 1999 and 2000, CBS and the *Wichita Eagle* newspaper both used their Web sites to publish previously unpublished transcripts of interviews with murder suspects that had been subpoenaed by prosecutors. This paper examines the wisdom of using a Web site to publish subpoenaed material. The paper concludes that routine publishing of such material may help the media avoid subpoenas and differentiate their Web sites from their traditional publications, but there also are potential dangers.

The Pros and Cons of Using a Media Web Site to Publish Subpoenaed Information

In 1999, a Texas prosecutor issued a subpoena to CBS for the outtakes, or unaired portions, of its interview with the defendant in a sensational murder case. CBS had interviewed the defendant in jail shortly before his trial was to begin and aired about ten minutes of a two-hour session with Dan Rather. After CBS lost its battle to quash the subpoena for the outtakes and a transcript of the entire interview, CBS placed the entire transcript on its Web site to make it available to the public.[1]

In 2000, the *Wichita Eagle* newspaper was faced with a similar situation and reacted in a similar way. It put the transcript of its tape-recorded interview with a murder suspect on its Web site after losing a fight to quash a subpoena for the information. The Web site also provided a link to the audiotape of the interview.[2]

Both cases raise interesting questions about media law and about news organizations' use of their Web sites to provide information to the public that otherwise would go unpublished or unaired. While it could be argued that any decision by a news organization that gets more important information before the public is a good one, there are reasons for newspapers and broadcasters to move cautiously. As this paper will argue, if news organizations follow the lead of CBS and the *Wichita Eagle*, there are risks as well as possible rewards to both their legal rights and their relationships with online readers.

The first part of this paper will examine the issue of why the media fight subpoenas. Next, the paper will look at the CBS and Wichita cases more closely. The third part of the paper will discuss the wisdom of publishing subpoenaed information on the Web in the contexts of law and the use of the Web by news organizations and their readers.

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[1] *See* text accompanying *infra* notes 47-53.

[2] *See* text accompanying *infra* notes 54-58.

Subpoenas and the Press

There is little doubt that subpoenas pose, at best, a major nuisance to the news media. Journalists argue that subpoenas are more than a nuisance, of course. They are also a threat to important First Amendment and public policy interests.

The U.S. Supreme Court has only tackled the issue once of whether there should be a journalist's privilege giving reporters, photographers, and other news professionals the right to refuse to identify sources to authorities. The narrowness of the issue decided by the Court in *Branzburg v. Hayes*[3] and the sharply divided nature of the ruling did not provide clear guidelines for lower courts, however.

In *Branzburg*, the Supreme Court's 5-4 majority determined that the First Amendment could not be interpreted as giving reporters the right to refuse to testify before grand juries about crimes they had witnessed confidential sources committing or to which the sources had confessed. Justice Byron White, writing for the majority, said the Court could not "seriously entertain" the idea that it was better to write about crime than to "do something about it."[4] Faced with contradictory and unpersuasive evidence about the degree to which enforcing grand jury subpoenas would impede the ability of the press to gather news, the Court said it was unwilling to force the judiciary to travel a "long and difficult" road to "an uncertain destination."[5] Because no privilege could exist that would allow every citizen to refuse to give testimony because he or she received evidence in confidence, courts would have to determine who was a "journalist," Justice White's opinion said. But the First Amendment press clause guaranteed a right to publish to all people, not just those who worked for the institutional media, the Court said.[6] Also, the Court said that an absolute privilege would tilt the balance between First Amendment and law enforcement interests too far in favor of the journalists. A qualified privilege, which would require that the government to make a showing in each case that its interests in law enforcement were more important than the media's interests in protecting sources, would entangle the courts in long and difficult deliberations about whether to enforce a subpoena, the majority said.[7]

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[3] 408 U.S. 665 (1972).

[4] *Id.* at 692.

[5] *Id.* at 703.

In a pivotal concurring opinion, however, Justice Lewis Powell, one of the five justices in the majority, noted the narrowness of the Court's ruling. He also said that if journalists were subpoenaed by grand juries for harassment purposes or for information with no clear relevance to the proceedings, the courts would be available to journalists for challenges to the subpoenas.[8] However, like the majority, he rejected the idea that journalists should be able to challenge subpoenas and require the government to show compelling need, relevancy, and lack of alternative sources before the journalists even entered the grand jury room.[9]

In dissenting opinions, Justice William O. Douglas and Justice Potter Stewart, who was joined by Justices William Brennan and Thurgood Marshall, argued that the majority had improperly balanced the competing interests at stake. Justice Douglas argued that the press should have an absolute privilege barring any grand jury, court, or legislative committee from subpoenaing journalists. He argued that no balancing of interests was required because the writers of the Bill of Rights did all of the balancing required when they wrote the First Amendment "in absolute terms."[10] Justice Douglas warned that the majority opinion would have two dire effects on the "wide-open and robust dissemination of ideas" facilitated by a free press and essential to self-government. First, the decision would cause dissidents fearful of exposure to be less willing to trust the press, he said. Second, the press's fear of accountability to the government would cause editors and critics of the government to be more timid in what they published.[11]

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[6] *Id.* at 704.

[7] *Id.* at 705-706.

[8] *Id.* at 709-710 (Powell, J., concurring).

Justice Stewart complained about the majority's "crabbed view" of the First Amendment. He said the decision paved the way for the government to "annex the journalistic profession as an investigative arm," which would undermine the media's historic independence from government. Justice Stewart also argued that the decision would undermine the "full and free flow of information to the public" that was central to the press's protection under the First Amendment.[12] Unlike Justice Douglas, however, Justice Stewart argued that the interests of journalists should be balanced against those of grand juries and law enforcement agencies by requiring use of a balancing test on a case-by-case basis when a journalist was subpoenaed. The test, similar to the one rejected by the majority, would require the government to show, before being allowed to call a journalist as a witness, that there was probable cause to believe that the journalist had information that was clearly relevant to a probable violation of the law; that there

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[9] *Id.* at 710 and * (Powell, J., concurring).

[10] *Id.* at 713 (Douglas, J., dissenting).

[11] *Id.* at 720-721 (Douglas, J., dissenting).

[12] *Id.* at 725-726 (Stewart, J., dissenting).

were no alternative means to obtaining the information; and that there was a compelling and overriding need for the information.[13]

Simply put, the *Branzburg* decision stated that there was no First Amendment imperative that reporters be granted a privilege not available to all citizens when they were called to appear before grand juries to testify about crimes committed by confidential sources that they had witnessed. Justice Powell's concurrence emphasized that the decision was narrow, applying only to grand jury proceedings in which journalists were subpoenaed to testify in good faith. The dissenters argued that the decision would damage the public's interest in a free flow of information obtained via the institutional press and the press's interest in maintaining the appearance and reality of independence from government.

Interestingly, federal appellate courts that have interpreted *Branzburg* have nearly unanimously sided with the dissenters. All of the federal appellate courts except the Sixth Circuit of the U.S. Courts of Appeals have recognized, to one degree or another, a qualified privilege granting reporters the right to challenge subpoenas to testify in criminal and civil trials in which they are not parties, libel proceedings in which they are parties, and even, in rare instances, to grand juries.[14] As the Sixth Circuit noted in denying the existence of a federal journalist's privilege, the federal courts that have recognized a privilege have done so by interpreting the

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[13] *Id.* at 743 (Stewart, J., dissenting).

[14] *See, e.g.*, Bursey v. United States, 466 F.2d 1059 (9th Cir. 1972), *reh'g denied*, 466 F.2d 1090 (9th Cir. 1972) (grand jury); Cervantes v. Time, Inc., 464 F.2d 986 (8th Cir. 1972), *cert. denied*, 409 U.S. 1125 (1973) (libel); Baker v. F & F Investment Co., 470 F.2d 778 (2d Cir. 1972), *cert. denied*, 411 U.S. 966 (1973) (civil); Zerilli v. Smith, 656 F.2d 705 (D.C. Cir. 1981) (civil); United States v. Cuthbertson, 630 F.2d 139 (3d Cir. 1980), *cert. denied*, 454 U.S. 1056 (1981) (federal privilege exists in both civil and criminal cases); LaRouche v. NBC, 780 F.2d 1134 (4th Cir. 1986); Miller v. Transamerican Press, Inc., 621 F.2d 721 (5th Cir. 1980), *cert. denied*, 450 U.S. 1041 (1981) (journalists have First Amendment privilege, although it is not absolute); United States v. Lloyd, 71 F.3d 1256 (7th Cir. 1995) (district court did not abuse discretion in quashing subpoena in criminal case); Silkwood v. Kerr-McGee, 563 F.2d 433 (10th Cir. 1977) (recognizing privilege and finding that documentary filmmaker could assert it); United States v. Caporale, 806 f.2d 1487 (11th Cir. 1986) (recognizing qualified privilege in criminal case). *But see In* Re Grand Jury Proceedings, 810 F.2d 580 (6th Cir. 1987) (denying existence of any First Amendment privilege for journalists).

Powell concurrence as allowing, if not endorsing, assertion of the privilege in situations different from the one at issue in *Branzburg*.[15]

In rejecting the approach taken by other circuits, the Sixth Circuit said that reading Justice Powell's concurrence as an endorsement of the Stewart dissenting opinion would be tantamount to substituting the dissent for the majority opinion.[16] The court said Justice Powell's concurrence merely agreed with the majority and neither limited nor expanded upon Justice White's opinion. The concurrence only was intended to respond to Justice Stewart's mischaracterization of the majority opinion as an invitation to the government to "annex the press" as an investigative arm of the government, the Sixth Circuit said.[17]

Although the *Branzburg* majority noted that it was powerless to stop Congress from creating a journalist's privilege by statute, Congress has not done so in the nearly thirty years since *Branzburg*.[18] Also, the majority said it had no authority to forbid the states from interpreting their constitutions or common law as recognizing a privilege or providing the privilege through statutes.[19] By March 2001, thirty-one states and the District of Columbia had approved statutory privileges, or "shield laws."[20] Also, most of the states without shield laws have recognized a qualified privilege in at least one type of judicial proceeding.[21]

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[15] In Re Grand Jury Proceedings, 810 F.2d 580, 584-585 (6th Cir. 1987).

[16] *Id.* at 584.

[17] *Id.* at 585.

[18] Branzburg v. Hayes, 408 U.S. 665, 706 (1972).

[19] *Id.* At the time Branzburg v. Hayes was argued before the Court, seventeen states already had statutory privileges, as the opinion noted. The seventeen were Alabama, Alaska, Arizona, Arkansas, California, Indiana, Kentucky, Louisiana, Maryland, Michigan, Montana, Nevada, New Jersey, New Mexico, New York, Ohio, and Pennsylvania. *Id.* at 689.

[20] *See* Ala. Code § 12-21-142 (Michie 1995, Supp. 1998); Alaska Stat. §§ 09.25.300 to 09.25.390 ((1998); Ariz. Rev. Stat. Ann. § 12-2237 (West 1994, Supp. 1999); Ark. Code Ann. § 16-85-510 (Michie 1987); Cal. Evid. Code § 1070 (West 1995, Supp. 2000); Colo Rev. Stat. § 13-90-119 (Bradford 1999); Del. Code Ann. tit. 10, §§ 4320 to 4326 (Michie 1999); D.C. Code Ann. §§ 16-4701-16-4704 (Michie 1997, Supp. 1998); Fla. Stat. Ann. § 90.5015 (West 1999, Supp. 2000); Ga. Code Ann. § 24-9-30 (Michie 1995, Supp. 1999); Ill. Comp. Stat. ann. §§ 5/8-901 to 5/8-909 (Michie 1993, Supp. 1999); Ind. Code Ann. §§ 34-46-4-1 to 34-46-4-2 (West 1999); Ky. Rev. Stat. § 421.100 (Michie 1992, Supp. 1999); La. Rev. Stat. Ann. §§ 1451-1459 (West 1999, Supp. 2000); Md. Ann. Code, Cts. & Jud. Pro., § 9-112 (Lexis Law Pub. 1998, Supp. 2000); Mich. Comp. Laws §

The *Branzburg* decision came at a time when subpoenas served on the news media were relatively rare. One pre-*Branzburg* commentary suggested, without being specific, that the number of subpoenas served on the media had increased in the late 1960s as the government sought evidence of wrongdoing by antiwar protesters and other radicals.[22] Another study of the journalist's privilege issue about ten years after *Branzburg* said that the total number of

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767.5A (West 1982, as amended, Supp. 1999); MINN. STAT. ANN. §§ 595.021 TO 595.025 (West 1988, as amended, Supp. 2000); MONT. CODE ANN. §§ 26-1-901 TO 26-1-902 (1999); N.M. EVID. RULES § 11-514 (Michie 1994); NEB. REV. STAT. §§ 20-144 TO 20-147 (1997); NEV. REV. STAT. § 49.275 (Michie 1996, Supp. 1999); N.J. STAT. ANN. §§ 2A:84A-21 TO 2A:84A-21.13 (West 1994); N.Y. CIV. RIGHTS LAW § 79-H (West 1992, Supp. 1999); N.C. GEN. STAT. ANN. § 8-53.11 (Lexis law Pub. 1999); N.D. CENT. CODE § 31-01-06.2 (Michie 1996, Supp. 1999); OHIO REV. CODE ANN. §§ 2739.04 & 2739.12 (Banks-Baldwin 1994, Supp. 1999); OKLA. STAT. ANN. TIT. 12, § 2506 (West 1993); OR. REV. STAT. ANN. §§ 44.510 TO 44.540 (Butterworth 1988, Supp. 1998); 42 PA. CON. STAT. ANN. § 5942 (West 1982, Supp. 1999); R.I. GEN. LAWS §§ 9-19.1-1 TO 9-19.1-3 (1998); S.C. CODE § 19-11-100 (Lawyers Co-Op 1985, as amended, Supp. 1999); TENN. CODE ANN. § 24-1-208 (Michie 1980, as amended, Supp. 1999).

[21] *See* Sierra Life Insurance Co. v. Magic Valley Newspapers, 623 P.2d 103 (Idaho 1981) (lower court should consider newspaper's privilege arguments before ordering disclosure in libel case); In Re Contempt of Wright, 700 P.2d 40 (Idaho 1985) (recognizing confidential-source privilege in criminal case): Winegard v. Oxberger, 258 N.W.2d 847 (Iowa 1977) (privilege exists in civil proceedings but overcome in this case); State v. Sandstrom, 581 P.2d 812 (Kan. 1978) (limited privilege exists in criminal cases); Sinnott v. Boston Retirement Bd., 524 N.E.2d 100 (Mass. 1988) (tacitly recognizing privilege in civil case); In Re John Doe Grand Jury Invest., 574 N.E.2d 373 (Mass. 1991) (recognizing privilege in criminal grand jury setting); State ex. rel. Classic III Inc. v. Ely, 954 S.W.2d 650 (Mo. Ct. App. 1997) (defendant magazine in libel case not required to reveal confidential sources); Opinion of the Justices, 373 A.2d 644 (N.H. 1977) (recognizing privilege for confidential information in civil case in which journalist not a party); State v. Siel, 444 A.2d 499 (N.H. 1982) (recognizing privilege in criminal case); Hopewell v. Midcontinent Broadcasting Corp., 538 N.W.2d 780 (S.D. 1995) (recognizing privilege and ruling for journalist in libel case in which journalist was party): Dallas Oil and Gas, Inc. v. Mouer, 533 S.W.2d 70 (Tex. App. 1976) (recognizing privilege for confidential sources in civil actions); Dallas Morning News Co. v. Garcia, 822 S.W.2d 675 (Tex. App. 1991) (granting writ of mandamus allowing journalists to keep sources confidential in libel action) (*But see* State ex. rel. Healey v. McMeans, 884 S.W.2d 772 (Tex. Crim. App. 1994) (no privilege exists in criminal cases); Coleman v. State, 1997 Tx. Crim. App. LEXIS 25 (Tex. Crim. App. 1997), *rev'd on other grounds*, 966 S.W.2d 525 (Tex. Crim. App. 1998) (no privilege for confidential or nonconfidential information in criminal cases, but quashing of subpoena not reversible error)); State v. St. Peter, 315 A.2d 254 (Vt. 1974) (privilege applies in criminal cases); Brown v. Commonwealth, 204 S.E.2d 429 (Va. 1974) (privilege applies in criminal cases); Senear v. Daily Journal-American, 641 P.2d 1180 (Wash. 1982) (en banc) (privilege exists in libel cases); Clampitt v. Thurston County, 658 P.2d 641 (Wash. 1983) (en banc) (privilege exists in civil actions in which journalist not a party); State v. Rinaldo, 689 P.2d 392 (Wash. 1984) (en banc) (privilege applies in criminal proceedings); State v. Knops, 183 N.W.2d 93 (Wisc. 1971) (in pre-*Branzburg* case, privilege found to exist in criminal grand jury case but is overcome by compelling need for journalist's information); Zelenka v. State, 266 N.W.2d 279 (Wisc. 1978) (finding privilege bars disclosure of confidential source in criminal case); State ex. rel. Green Bay Newspaper Co. v. Circuit Court, 335 N.W.2d 367 (Wisc. 1983) (same); State ex. rel. Hudok v. Henry, 389 S.E.2d 188 (W.Va. 1990) (litigant in civil action must overcome privilege to subpoena non-party journalist as witness); State ex. rel. Charleston Mail v. Ranson, 488 S.E.2d 5 (W.Va. 1997) (criminal defendant must overcome privilege before subpoenaing journalists' nonconfidential photographs of crime scene).

[22] Margaret Sherwood, Comment, *The Newsman's Privilege: Government Investigations, Criminal Prosecutions and Private Litigants*, 58 CAL. L. REV. 1198 (1970).

subpoenas issued to the press annually averaged about 1.5 from 1960 to 1968. However, the number increased to seventy-five per year in the next two years and to eighty-three annually from 1970 to 1976.[23]

By contrast, studies by the Reporters Committee for Freedom of the Press over the past twelve years have found that news organizations now receive thousands of subpoenas each year. The Reporters Committee found that in 1989 1,042 news organizations that responded to its survey reported receiving a total of 4,408 subpoenas. The number reported by each organization ranged from 0 to more than 100.[24] Subsequent surveys for the years 1991, 1993, and 1997 also found that subpoenas served on the news media nationwide each year numbered in the thousands.[25]

The Reporters Committee studies also found that surprisingly few subpoenas sought confidential sources or information. In fact, the studies found that only about 3 percent to 5 percent of all subpoenas served on the media sought confidential material. The rest were for published information or for unpublished, nonconfidential material, such as outtakes, photographs, or reporters' notes on events or stories for which information was not gathered with a promise of confidentiality.[26] Journalists often argue that their nonconfidential material as well as their confidential information should be privileged to stem the rising tide of subpoenas.

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[23] Achal Mehra, *Newsmen's Privilege: An Empirical Study*, 59 JOURNALISM Q. 560, 561 (1982).

[24] REPORTERS COMM. FOR FREEDOM OF THE PRESS, AGENTS OF DISCOVERY: A REPORT ON THE INCIDENCE OF SUBPOENAS SERVED ON THE NEWS MEDIA IN 1989 (1991) at 5.

[25] *See* REPORTERS COMM. FOR FREEDOM OF THE PRESS, AGENTS OF DISCOVERY: A REPORT ON THE INCIDENCE OF SUBPOENAS SERVED ON THE NEWS MEDIA IN 1991 (1993) at 6 (43.9 percent of 1,010 responding news organizations report receiving a total of 3,281 subpoenas in 1991); REPORTERS COMM. FOR FREEDOM OF THE PRESS, AGENTS OF DISCOVERY: A REPORT ON THE INCIDENCE OF SUBPOENAS SERVED ON THE NEWS MEDIA IN 1993 (1995) at 3 (52.1 percent of 900 responding news organizations report receiving 3,519 subpoenas in 1993); REPORTERS COMM. FOR FREEDOM OF THE PRESS, AGENTS OF DISCOVERY: A REPORT ON THE INCIDENCE OF SUBPOENAS SERVED ON THE NEWS MEDIA IN 1997 (1999) at 5 (54 percent of 597 responding news organizations report receiving a total of 2,725 subpoenas in 1997).

[26] *See* studies cited *id.* and at *supra* note 24.

But while there is fairly universal agreement in federal and state courts that journalists should have at least qualified protection from being forced to disclose information they received in confidence, there is less agreement about protection for nonconfidential information. Since a federal district court in Florida first raised the issue of protecting nonconfidential information in 1975,[27] only four federal appellate courts have recognized a privilege for nonconfidential information, and most agree that nonconfidential information should get less protection than confidential material.[28] Only one federal appellate court has expressly rejected the privilege, however.[29] In the states and the District of Columbia, about twenty of the thirty-two shield laws appear to be written broadly enough to protect information obtained without a journalist's promise of confidentiality.[30] However, in states without shield laws, high courts in only two, Iowa and West Virginia, have recognized a privilege for nonconfidential information in both civil and criminal proceedings.[31]

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[27] Loadholtz v. Fields, 389 F.Supp. 1299 (M.D. Fla. 1975) (in civil case in which reporter was not a party, subpoena for testimony about interview with known source quashed because a subpoena for nonconfidential material would have the same "chilling effect" on the free flow of information as a subpoena for confidential information).

[28] *See* Gonzales v. Nat'l Broadcasting Co., 194 F.3d 29 (2d Cir. 1999); United States v. Cuthbertson, 630 F.2d 139 (3d Cir. 1980), *cert. denied sub nom.*, Cuthbertson v. CBS, Inc., 449 U.S. 1126 (1981); United States v. Cuthbertson, 651 F.2d 189 (3d Cir. 1981), *cert. denied sub nom.*, Cuthbertson v. CBS, Inc., 454 U.S. 1056 (1981); Shoen v. Shoen, 5 F.3d 1289 (9th Cir. 1993); Shoen v. Shoen, 48 F.3d 412 (9th Cir. 1995); Church of Scientology v. Daniels, 992 F.2d 1329 (4th Cir. 1993), *cert. denied*, 510 U.S. 869 (1993).

[29] *See* United States v. Smith, 135 F.3d 963 (5th Cir. 1998) (finding, in criminal case in which both defense and prosecution subpoenaed television station's outtakes of interview with arson suspect, that federal privilege did not apply to unpublished information unless confidentiality was promised).

[30] For a discussion of shield law protection for nonconfidential information, *see* Anthony L. Fargo, *The Journalist's Privilege for Nonconfidential Information in States With Shield Laws*, 4 COMM. L. & POL'Y 325 (1999).

[31] *See* Lamberto v. Bown, 326 N.W.2d 305 (Iowa 1982) (civil action); Bell v. Des Moines, 412 N.W.2d 585 (Iowa 1987) (civil action); Denk v. State, 20 Media L. Rep. 1454 (BNA) (Iowa 1992) (criminal case); State ex. rel. Hudok v. Henry, 389 S.E.2d 188 (W.Va. 1989) (civil action); State ex. rel. Charleston Mail v. Ranson, 488 S.E.2d 5 (W.Va. 1997) (criminal case). In addition, lower appellate courts in Wisconsin and Texas have recognized a qualified privilege when subpoenas have been issued for nonconfidential information, although Texas appellate courts recently have backtracked from that position. *See* Kurzynski v. Spaeth, 538 N.W.2d 554 (Wisc. Ct. App. 1995); Channel Two Television Co. v. Dickerson, 725 S.W.2d 470 (Tex. App. 1987) (recognizing privilege for nonconfidential information in civil lawsuit). *But see* Dolcefino v. Ray, 902 S.W.2d 165 (Tex. App. 1995) (denying existence of privilege for nonconfidential information in Texas); In Re Union Pacific Railroad Co., 6 S.W.3d 310 (Tex. App. 1999) (same).

While the federal courts and the states disagree on the existence and extent of the journalist's privilege, one subject on which most agree is that published material is not privileged.

In states with shield laws, for example, many of the statutes say that publication or broadcast of specific information constitutes a waiver of the privilege for at least that information.

For example, Colorado specifically excludes information actually published or broadcast from the privilege.[32] However, the statute also states that only a voluntary disclosure of information constitutes a waiver. The statute also states that if information related to, but not directly addressing, the information sought is disseminated, the privilege still applies to the specific information sought.[33] In other words, if a subpoena seeks all of a television station's broadcast and unbroadcast tapes related to a specific story, the subpoenaing party only has a right to those specific pieces of information that were broadcast. Similarly, New Jersey's statute says that dissemination of information only waives the privilege as to the information disseminated.[34] New York's law specifically privileges only unpublished nonconfidential information. Its waiver provision states that the privilege no longer exists if the person subpoenaed discloses specific information to any person who is not entitled to claim the privilege.[35] However, the statute also specifically privileges journalists' employers,[36] so presumably a journalist who confided in his or her editor would not waive the privilege.

Delaware provides that a reporter may be examined and cross-examined on any information for which he or she waived the privilege, but not on other facts for which he or she still claims the privilege.[37] The statute also states that a journalist does not waive the privilege by disclosing information protected by the privilege to another party.[38] Similarly, Montana states that the privilege is not waived unless the journalist voluntarily waives the privilege, even if he or she agreed to testify.[39] Presumably, this means that a journalist can disclose certain information while still claiming the privilege for related information.

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[32] COLO. REV. STAT. § 13-90-119 (2)(b) (Bradford 1999).

[33] *Id.*, (4).

[34] N.J. STAT. ANN. §§ 2A:84A-21.3 (b) (West 1994).

[35] N.Y. CIV. RIGHTS LAW § 79-h (g) (West 1992, Supp. 1999).

[36] *Id.*, (f).

[37] DEL. CODE ANN. TIT. 10, § 4325 (Michie 1999).

However, some statutes simply state that dissemination of information obtained by the journalist in the course of his or her newsgathering activities does not waive the privilege. The District of Columbia states that dissemination of a source or a portion of the news or information does not constitute a waiver.[40] Maryland uses almost the same terminology.[41] Florida simply states that a professional journalist "does not waive the privilege by publishing or broadcasting information."[42] South Carolina, likewise, states that publication of "any information, document, or item" obtained in the gathering or dissemination of news does not constitute a waiver.[43]

The studies by the Reporters Committee served on the news media in given years suggest that information already published or broadcast is the biggest target for prosecutors and other attorneys. For example, in its study of the number of subpoenas issued to the media in 1989, the Reporters Committee found that more than 46 percent of the 4,408 subpoenas served on 1,042 responding news organizations sought copies of published or aired stories or photographs.[44] Surveys on the number of subpoenas issued in 1991, 1993, and 1997 found similar patterns.[45]

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[38] *Id.*

[39] MONT. CODE ANN. § 26-1-903 (2) (1999).

[40] D.C. CODE ANN. § 16-4704 (Michie 1997, Supp. 1998).

[41] MD. CODE ANN., CTS. & JUD. PROC. § 9-112 (e) (Lexis Publishing 1998, Supp. 2000).

[42] FLA. STAT. ANN. § 90.5015 (4) (West 1999, Supp. 2000).

[43] S.C. CODE § 19-11-100 (C) (Lawyers Co-op Supp. 1999).

[44] REPORTERS COMM. FOR FREEDOM OF THE PRESS, AGENTS OF DISCOVERY: A REPORT ON THE INCIDENCE OF SUBPOENAS SERVED ON THE NEWS MEDIA IN 1989 (1991) at 5, 8.

[45] *See* REPORTERS COMM. FOR FREEDOM OF THE PRESS, AGENTS OF DISCOVERY: A REPORT ON THE INCIDENCE OF SUBPOENAS SERVED ON THE NEWS MEDIA IN 1991 (1993) at 9 (45.1 percent); *See* REPORTERS COMM. FOR FREEDOM OF THE PRESS, AGENTS OF DISCOVERY: A REPORT ON THE INCIDENCE OF SUBPOENAS SERVED ON THE NEWS MEDIA IN 1993 (1995) at 6 (41.8 percent); *See* REPORTERS COMM. FOR FREEDOM OF THE PRESS, AGENTS OF DISCOVERY: A

News organizations told the Reporters Committee that they generally did not fight subpoenas for published or broadcast information, although some reported that they fought all subpoenas for all information as a matter of policy.[46]

The CBS and *Wichita Eagle* Cases

In late 1999, CBS broadcast a story on *Sixty Minutes II* about the upcoming trial of the last of three defendants in a racially motivated slaying in Texas that garnered national attention because of its brutality. Dan Rather, anchor of the *CBS Evening News*, interviewed Shawn Allen Berry in jail. Berry's two co-defendants already had been convicted and sentenced to death for beating James Byrd Jr., an African-American, and then dragging him behind their truck.[47] In the story, Berry claimed on air that he was an unwilling participant in the slaying but went along with it because the co-defendants threatened him.[48]

Prosecutors in the case subpoenaed Rather to testify and also subpoenaed a Dallas-based CBS producer, Mary Mapes, to produce the unedited outtakes of the interview with Berry. CBS vowed to oppose both subpoenas, arguing that important First Amendment issues were at stake. CBS News President Andrew Heyward was quoted as saying that the outtakes were the equivalent of a reporter's notes and turning them over could "endanger a journalist's relationship with sources and hamper the ability to report freely and independently."[49]

REPORT ON THE INCIDENCE OF SUBPOENAS SERVED ON THE NEWS MEDIA IN 1997 (1999) at 7 (76 percent). The Reporters Committee changed the way it reported on types of information sought by subpoenas in the 1997 survey, which could explain the higher percentage of subpoenas reported for published material.

[46] *See, e.g.*, REPORTERS COMM. FOR FREEDOM OF THE PRESS, AGENTS OF DISCOVERY: A REPORT ON THE INCIDENCE OF SUBPOENAS SERVED ON THE NEWS MEDIA IN 1997 (1999) at 8-9 (quoting comments from news organization representatives saying that most did not fight subpoenas for published or broadcast materials, but some did to discourage attorneys from forcing the organizations to do time-consuming searches).

[47] Terri Langford, *Berry Receives Life Sentence for Jasper Dragging Death*, DALLAS MORNING NEWS, Nov. 19, 1999, at A1.

[48] C. Bryson Hull, *Prosecutors Seek Rather as Jasper Trial Witness*, AUSTIN AMERICAN-STATESMAN, Oct. 28, 1999, at B1.

[49] *Id.*

Prosecutors eventually dropped their subpoena for Rather in exchange for a copy of a transcript of the interview and portions of the unaired videotape after CBS lost its appeals of the orders to turn over the information. Prosecutors used some of the information at Berry's trial to show that he had changed the story he gave police about how the crime took place.[50] Berry was convicted but, unlike his codefendants, was sentenced to life imprisonment instead of death.[51]

On the same day that CBS turned the transcript of the Berry interview over to prosecutors, it also posted the transcript on its Web site, www.cbs.com. Mike Raiff, a CBS attorney in Dallas, said that CBS was in the business of publishing news, and the transcript had become news. "This has turned into a circus and a sideshow, and in the process, it has become quite newsworthy," he said.[52] *Quill*, a magazine published by the Society of Professional Journalists, quoted Christine Tatum, the chair of SPJ's Legal Defense Fund, praising CBS for the move. "That was very smart of them to put the information out there for everyone. To let the world see how stupid the prosecutors were in this whole thing," Tatum said.[53]

In Kansas, the *Wichita Eagle* newspaper made a similar decision when faced with a similar situation in 2000. Reporter Tim Potter wrote on April 19, 2000 about telephone interviews with murder suspect Tanner Lee Green, who was charged with killing a Goddard teacher, Janice Vredenburg, in her home. Green told the reporter that he was innocent and could account for his whereabouts on the day of the killing. Green had been in Vredenburg's home as part of his job for a company that repaired water damage.[54]

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[50] Terri Langford, *CBS Releases Transcript of Suspect's Interview*, DALLAS MORNING NEWS, Nov. 11, 1999, at A32; Michael Graczyk, *Prosecution Tries Its Case*, Nov. 11, 1999, downloaded from www.abcnews.com on Nov. 18, 1999.

[51] Langford, *supra* note 47.

[52] Patty Reinert, *CBS Posts Interview on Internet; Court Gets Transcript of Rather-Berry Tape*, HOUSTON CHRONICLE, Nov. 11, 1999, at A28.

[53] *CBS Posts Transcripts of Dragging Death Interview*, QUILL, December 1999, at 4.

[54] Tim Potter, *Man Says He Didn't Murder Teacher*, WICHITA EAGLE, April 19, 2000. Downloaded from www.wichitaeagle.com/news/local/crime-courts on May 10, 2000. (The Web version of the story did not indicate on what page the story appeared in the print version of the newspaper.)

Two days later, the *Eagle* reported that prosecutors had subpoenaed Potter, ordering him to appear in court and present his notes and any related documents from his interviews with Green. The newspaper's attorney, Lyndon Vix, said the newspaper planned to ask the court to quash the subpoena. "The *Eagle's* position all along has been that we do our jobs, and you do your jobs, and we're not an investigative arm of the state," Vix was quoted as saying in the newspaper.[55] However, after the *Eagle* refused to turn over the notes from the interviews, a judge in Sedgwick County, Kansas, found the newspaper in contempt and fined it $500 a day until it agreed to turn over the material. The judge said that the information about Green's alibi and other statements attributed to him were not available elsewhere, because Green refused to talk to police, and were clearly relevant to the case.[56]

On May 6, the newspaper reported that it had turned over the notes "reluctantly" after its attorneys concluded that it would be difficult at best for the newspaper to win at appeal. Shortly before the paper turned over the notes to prosecutors, it posted the notes from an April 14 interview with Green, copies of handwritten notes from another interview, a transcript of a third interview that was tape-recorded with Green's permission, and a hypertext link to a "RealAudio" recording of the actual taped interview. *Eagle* Editor Rick Thames said the notes and transcript were posted on the Web so that the newspaper could honor its policy of not releasing unpublished information. He said the notes had become newsworthy because of the court battle over them and explained that "space constraints" prevented the paper from publishing the transcript of the taped interview in the print version of the newspaper.[57] Despite his pleas of innocence, Green was eventually convicted of killing Vredenburg and was sentenced to fifty years in prison without the possibility of parole.[58]

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[55] Ron Sylvester, *Wichita Eagle Reporter Subpoenaed Over Jail Interview,* WICHITA EAGLE, April 21, 2000. Downloaded from www.wichitaeagle.com/news/local/crime-courts on May 10, 2000. (The Web version of the story did not indicate on what page the story appeared in the print version of the newspaper.)

[56] Hurst Laviana, *Judge Finds Eagle in Contempt for Withholding Reporter's Notes,* WICHITA EAGLE, May 3, 2000. Downloaded from www.wichitaeagle.com/news/local/crime-courts on May 10, 2000. (The Web version of the story did not indicate on what page the story appeared in the print version of the newspaper.)

[57] Hurst Laviana, *Eagle Turns Over Reporter's Notes,* WICHITA EAGLE, May 6, 2000. Downloaded from www.wichitaeagle.com/news/local/crime-courts on May 10, 2000. (The Web version of the story did not indicate on what page the story appeared in the print version of the newspaper.)

The Web, the Law, and What Audiences Want

The use of the Web by both traditional media and entrepreneurs raises a host of new issues about First Amendment law. In regard to the journalist's privilege, both the Reporters Committee and a well-known journalism review have noted that there are new concerns that the law has not addressed yet. The Reporters Committee's study of subpoenas issued to the news media in 1997 noted that eleven respondents to its survey, or about 2 percent of the total, reported that they had received subpoenas for online content. A news director in Arizona was quoted as suggesting that subpoenas for e-mails and computer cache files were "a growing concern."[59] But in a footnote, the report also noted that two news organizations reported that their Web sites had proved to be helpful in reducing the number of subpoenas they received. A Tennessee newspaper and a Hawaii television station said that public access to published material in their electronic archives had cut down on the number of subpoenas they received for similar information.[60]

A more vexing problem related to the Web and the law is raised by the need, under privilege law, to determine whether someone is a "journalist" who can assert the protection of the privilege. As *Columbia Journalism Review* noted in an article in 1998, the Web allows anyone to publish information and to claim that he or she is a journalist, or at least a publisher.[61] This development, if it ever becomes a serious issue for the courts, could, in the worst case, doom the journalist's privilege by stretching the definition of journalist to the breaking point. Courts likely would find that it was better to have no privilege than one that conceivably could be claimed by anyone with a computer and a modem. Although the justices who decided *Branzburg v. Hayes* probably did not anticipate the use of the Internet as a communication tool (who did in 1972?), the type of definition problem that the Web raises is why the justices warned against recognizing a First Amendment privilege that would force courts to define "journalist."[62] As Justice White's majority opinion noted, many professionals, such as academics, could claim for purposes of asserting the privilege that they performed the same functions as the press in contributing to the free flow of information. The First Amendment, the Court said, was intended to protect everyone from the "lonely pamphleteer" to the large metropolitan newspaper publisher.[63] Substitute "lonely Web publisher" for "lonely pamphleteer" and the same problem arises in a new context. The Court in *Branzburg* was saying, in effect, that because a privilege for everyone would basically destroy the ability of the Court system to compel witnesses to testify, it was better that there be no privilege for anyone.

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[58] Hurst Laviana, *Hard 50 for Green in Murder*, WICHITA EAGLE, Feb. 17, 2001, at A9.

[59] REPORTERS COMM. FOR FREEDOM OF THE PRESS, AGENTS OF DISCOVERY: A REPORT ON THE INCIDENCE OF SUBPOENAS SERVED ON THE NEWS MEDIA IN 1997 (1999), at 7.

[60] *Id.* at 19.

[61] Denise Caruso, *The Law and the Internet: Beware*, COLUMBIA JOURNALISM REV., May/June 1998, at 57.

Putting aside for the moment the problem of defining journalist, which could easily be the topic for a paper all its own, it is clear that the Web offers both opportunities and dangers for the media in relation to subpoenas. As the respondents to the Reporters Committee survey suggested, the use of computers and the Web to gather, store, and disseminate information offers both more information for attorneys to go after and alternatives to subpoenas for retrieving information from archives.[64] The CBS and *Wichita Eagle* cases suggest one possible, partial solution to the subpoena problem. If you want to avoid the appearance that your news organization has surrendered unpublished material to prosecutors, which might make future sources less likely to trust you, why not publish the subpoenaed material for all to see? You might make the public see "how stupid" the prosecutors were for going after the information in the first place,[65] and you can still claim that you do not release unpublished material to anyone.[66]

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[62] *See* text accompanying *supra* note 6.

[63] Branzburg v. Hayes, 408 U.S. 665, 704-705 (1972).

[64] *See* text accompanying *supra* notes 59-60.

[65] *See* text accompanying *supra* note 53

What CBS and the *Eagle* may have failed to appreciate, however, is the possible risk of placing subpoenaed material on the Web. Both news organizations fought the subpoenas, risking jail time for a producer and heavy fines for the newspaper, to preserve the right to decide for themselves what information should be presented to the public and, by extension, the courts. When both organizations had to give up their legal challenges in the face of defeat, they not only turned over the subpoenaed information to the courts but also made the information fully available on the Web. In other words, the same information that the organizations had decided should not be publicly available and that they had fought to keep under wraps was suddenly "newsworthy" and therefore needed to be seen by anyone who had access to a computer and modem. How do such decisions protect the "free flow of information" and the allegedly fragile trust of potential sources, when the decisions appear to have been motivated at least in part by the need of the news organization to save face? Do the CBS and *Eagle* decisions to publish subpoenaed material, in both cases involving jailhouse interviews with criminal defendants, possibly weaken the privilege? Judges may be forgiven for looking askance at impassioned pleas by news organizations not to force them to turn over unpublished information when other organizations decide to publish the previously unpublishable to serve their own needs and not those of their sources. The public, already perhaps somewhat bewildered by why a news organization would risk jail time for a producer or heavy fines to protect alleged killers or an abstract legal right, could be forgiven for wondering who was really being "stupid."

Of course, the public may already be wondering, in a non-legal context, why it had not seen this information before. And that brings up the other concern raised by the CBS and *Eagle* cases, one grounded in the burgeoning body of research and commentary about what news organization Web sites could and should be when they grow up.

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[66] *See* text accompanying *supra* note 57.

Because of the speculative nature of this paper and its limited subject area, no attempt will be made here to summarize all of the academic and trade press research about news Web sites. However, one does not have to look far or wide to see that one major theme in articles to date is the failure of the established press to use their Web sites in ways that take full advantage of the unique properties of the Internet and the computer. For example, in the academic press, *Newspaper Research Journal* had four articles in two years, from Spring 1998 to Spring 2000, based on studies of Web sites run by newspapers. Most of the studies came to similar conclusions for different reasons: newspapers had to go beyond just providing "shovelware," or online versions of the same stories that appeared in print, to attract and keep readers online, who in turn could attract advertisers to the new medium. The earliest of the studies, based on observations of the operations at two newspaper Web sites, found that with the exception of photographs, staffers at the online operations rarely changed the content of the printed newspaper in updating the Web site. Technological and logistical problems were partly to blame, the researcher noted. Sometimes it was a challenge at one of the Web operations just to find the stories that had been edited for the print newspaper because of confusing code names.[67]

In the other NRJ articles, one group of researchers writing about a survey of online newspaper editors and a content analysis of newspaper Web sites found that the majority of newspapers were trying at least nominally to take advantage of the Web's ability to promote interactivity. Nearly all of the newspapers offered e-mail addresses that readers could use to contact staffers, and about one-third offered chat rooms and forums so that readers could connect with each other and with journalists. More than two-thirds of the newspapers examined had searchable archives to old stories, and about 43 percent of the editors surveyed said their online papers differed from the print versions, either by offering links to expanded in-depth coverage or shortening stories and reducing the number of stories available. The researchers concluded that the future success of online newspapers depended upon how well they took advantage of the unique features of the new medium, such as interactivity, unlimited space, hyperlinks to other Web sites, and the ability to search for specific information in news and advertising.[68] A study of how readers respond to various types of layers and links in digital stories noted at the outset that the study was designed to help newspapers determine how to best make use of the Web's unique features. The study noted that too many newspapers were simply "shoveling" their print stories onto the Web without thinking of ways that hypertext links and the layering of information could make use of the Web's unique properties.[69] Another study, this one examining the use of online newspapers by residents of Austin, Texas, found that readers of the local newspapers preferred the print versions of those papers, while those who also read out-of-town newspapers used the online versions. The study concluded that the online versions of the local papers were not different enough from the print versions to attract a critical mass of readers when the print version was easily accessible. The researchers concluded that newspapers would have to do a better job of differentiating their online publications from the traditional print publications if they hoped to attract more readers.[70]

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[67] Shannon E. Martin, *How News Gets From Paper to Its Online Counterpart*, 19 NEWSPAPER RESEARCH J. 64, 70 (Spring 1998).

In the trade press, similar conclusions abound. A 1997 *Columbia Journalism Review* article noted that one quandary for newspapers was that they had so far been unable or unwilling to offer breaking news during the day online, settling instead for providing a link to the Associated Press. This led to the embarrassing situation, for the editors of the newspapers, of having the AP essentially beat them to their own stories on their own Web sites.[71] Three years later, however, *American Journalism Review* was able to report that newspapers were doing a better job of providing breaking news, but that local television stations with Web sites were lagging far behind.[72] In a separate edition, a columnist for *American Journalism Review* found that the problem with television stations was that most of their Web sites were devoid of news altogether. Instead, the TV stations were mostly using their Web sites as public relations tools or were offering up, at best, "stale or shallow" stories in text, with little use of streaming video.[73] One of the most comprehensive stories in the trade press on online journalism suggested, based on dozens of interviews and observations, that most newspapers did not know what to do with their Web sites yet, but felt they had to be online to protect their franchises and be competitive.[74]

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[68] Foo Yeuh Peng, Naphtali Irene Tham, & Hao Xiaoming, *Trends in Online Newspapers: A Look at the U.S. Web*, 20 NEWSPAPER RESEARCH J. 52 (Spring 1999).

[69] Karen Vargo et al., *How Readers Respond to Digital News Stories in Layers and Links*, 21 NEWSPAPER RESEARCH J. 40 (Spring 2000).

[70] Hsiang Iris Chyi & Dominic Lasorsa, *Access, Use, and Preferences for Online Newspapers*, 20 NEWSPAPER RESEARCH J. 2 (Fall 1999).

[71] Scott Kirsner, *The Breaking News Dilemma*, COLUMBIA JOURNALISM REV., November/December 1997, at 18.

There has been much more written in both the academic and trade press about online journalism, but the brief sampling offered here raises a question about the CBS and *Wichita Eagle* situations. A reader might be forgiven for asking, after the organizations published their transcripts, why the network and the newspaper had not thought of doing so sooner. If the Web offers nearly unlimited space, the ability to use streaming video and audio, and the ability to layer news and link to more information, then why did no one think sooner to post the transcripts, audio tapes, or even streaming video of the entire CBS interview on the Web sooner? Why did it take subpoena battles to make the information newsworthy? Is it not obvious that a jailhouse interview with a murder suspect is newsworthy?

Again, of course, one needs to be cautious. From a legal standpoint, routinely publishing online full texts of interviews or other coverage of persons or events likely to end up in court could end up weakening the privilege by making it appear that all information gathered by a journalist is potentially part of the public domain, if there is a commercial or readership gain. A judge may find it hard to figure out why one interview is worth publishing in its entirety while another one is worth going to jail to keep out of the public eye. Still, if the Tennessee newspaper and the Hawaii television station are correct in saying that their Web sites have helped reduce subpoenas, a pre-emptive strike of publishing information likely to be subpoenaed may prevent long and costly court battles over unpublished material later.

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[72] Kelly Heyboer, *Going Live*, AMER. JOURNALISM REV., January/February 2000, at 39.

[73] Deborah Potter, *Behind the Curve*, AMER. JOURNALISM REV., July/August 2000, at 82.

[74] Chip Brown, *Fear.Com*, AMER. JOURNALISM REV., June 1999, at 50.

Conclusion

The use of Web sites by CBS and the *Wichita Eagle* to publish information that had been subpoenaed raises interesting and vexing questions about the developing law of the Internet. There are no easy answers to the questions raised, and this paper has not provided any. However, it is important that media professionals and attorneys begin to think more concretely about how their marketing and legal goals intersect and conflict.

In the CBS and *Eagle* cases, it appears that both organizations made the transcripts available online for public viewing in large part to save face. Whether CBS really intended to make the Texas prosecutors look "stupid," as a Society of Professional Journalists official suggested, is not clear. It is clear that the *Eagle* newspaper was trying to protect its position that it never turned over unpublished material, which led to its decision to post the full transcripts and an audio tape of its interviews with a murder suspect on its Web site. Whether readers would agree with the SPJ official that the CBS transcript would show readers how "stupid" the Texas prosecutors were is conjecture, but one wonders whether readers would understand the complex legal issues at stake or sympathize with the media.

From a marketing standpoint, the decisions by CBS and the *Eagle* to publish the information only after losing subpoena battles raise other questions. Why did the two organizations not publish the information to begin with, thus possibly avoiding the legal standoffs while also providing online readers with information they could not get from the traditional media? It would seem that one way a news organization could add value to its Web site and differentiate itself from its traditional product would be to provide such in-depth information. But would doing so on a routine basis help divert subpoenas from the media, as the Tennessee and Hawaii news organizations suggested to the Reporters Committee, or weaken traditional arguments in favor of the journalist's privilege? If everything that a news organization gathers is potentially newsworthy for the Web, is there anything left to protect from subpoenas, except the occasional confidential disclosure?

While this paper does not attempt to answer these questions, it would be wise of news organizations to think about them in some detail before they follow the lead of CBS and the *Wichita Eagle*.

INVESTIGATING DIALOGIC COMMUNICATION: A CONTENT ANALYSIS OF TOP CHINESE CORPORATE WEB PAGES

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INVESTIGATING DIALOGIC COMMUNICATION: A CONTENT ANALYSIS OF TOP CHINESE CORPORATE WEB PAGES

INTRODUCTION

The Internet has become a mass communication medium used by corporations for marketing, advertising, and public relations purposes. It has created a new type of public that seeks information more actively than those reached through traditional mass media such as television. The Internet is different from traditional mass media in that it is able to engage people in round-the-clock, direct, simultaneous, and interactive communication. It also provides corporations with more control over the information content and its dissemination. The Internet has changed the way corporations communicate and presents great opportunities, as well as new challenges, to public relations professionals. In short, the Internet rewrites the rules of public relations (Lawrence, 1996).

The interactive features of the Internet enable organizations to engage in dialogic communication with their publics in that they enable the organization and its publics to contribute equally in the interactive communication process. However, researchers (Esrock and Leichty, 1998) found that relatively few corporate Web pages are designed to facilitate meaningful two-way interaction between organizations and their publics. McMillan and Downes (2000) said that the level of interactivity in computer-mediated communication varies, and they pointed out that many corporation Web sites resemble an online brochure. Kent and Taylor (1998) observed that public relations literature about the Web has operated under a monologic communication continuum, which suggests that the primary role of public relations practitioners is to gather and disseminate information. Esrock and Leichty (1998) suggested that future research should document whether corporate communicators use the interactive features of Web pages with increasing frequency over time. They proposed that public relations researchers and practitioners should continue to monitor the development of the Internet to get ideas that can help communications professionals realize the interactive potential of the new technology.

The Internet has also facilitated the globalization of the business world, as the World Wide Web brings closer businesses all over the world. Corporate Web pages serve as broad yet convenient windows not only to domestic publics but also to customers and investors abroad. This new trend urges corporations to know about, as well as expose, their organizations to the businesses outside their own country. Therefore, a study of non-U.S. business Web pages might be a good start toward harvesting benefits from the globalization trend. The present study is intended to investigate the current status of Web usage by large Chinese firms, especially the way they employ the interactive features of the Web to directly communicate with their audiences.

China has an area of 9.6 million square kilometers, a population of 1.25 billion, and a history of five thousand years. As an emerging giant market, China offers great opportunities to businesses in and abroad. Since reforms were initiated in 1978, China's economy has enjoyed a high average growth rate of nine percent, and growth in foreign investment has been dynamic. As a result, China has achieved remarkable success in attracting foreign investment to many of the sectors in its economy in which it allows foreign direct investment (FDI), especially in the coastal regions and special economic zones (SEZs). International joint ventures (IJVs) between overseas companies and domestic state-owned enterprises (SOEs) have been the dominant mode of entry. Foreign invested enterprises (FIEs), which include foreign/Chinese equity joint ventures, cooperative or contractual joint ventures, and wholly foreign-owned firms in China, probably represent the most efficient part of the Chinese economy. However, state-owned enterprises are still the main source of financial revenue (Country Commercial Guide, 2000).

The Chinese government is encouraging widespread Internet use to facilitate dialogue between China and the outside world and thus to boost economic growth. In response to this, Chinese enterprises are also seeking to set up or upgrade their Web sites in order to enhance and foster trade. They have already realized the importance and effectiveness of the Internet as a new tool to propagate their products and services, and interactively communication with their publics in and abroad.

The Internet has existed in China since 1987. In recent years, Internet use has been surging at an amazing speed. Xinhua News Agency (2000) reported that the number of Internet users in China has skyrocketed to nearly nine million, which is a huge jump compared to the fact that there were only 620,000 Internet users in October 1997. Given its large population and fast-growing economy, China has the potential to become the biggest Internet, as well as telecommunications, market in the world. The Credit Lyonnais Securities Asia predicted that mainland China's online community will reach 20 million by the end of 2000, 45 million by the end of 2001, and 100 million within five years.

It is important to note that Chinese social systems, economic background, customs, and values are very different from other nations, especially Western countries. Therefore, multinational corporations that have or will have markets in China should study Chinese culture as well as business. Through an analysis of the content of Chinese corporate Web pages, this study provides useful insights into how large Chinese corporations respond to the new technology, and how they employ the interactive feature of the Web to directly communicate with their audiences. It is a pilot study that contributes to a better understanding of globalization of the business world, international communication, and international public relations.

RELATED LITERATURE REVIEW

Dialogic Communication

The unique features of the Internet allow corporations to engage in dialogic communication with their publics. In the literature, dialogic communication is referred to in many different terms, such as two-way communication, collaborative communication, computer-mediated communication, and interactive communication. Pearson (1989) indicated that dialogic communication is considered to be an especially ethical way of conducting public dialogue and public relations, because of the emphasis of dialogic communication on a process of negotiated communication. As Leeper (1996) suggested, ethical public relations is not about "responding" and "talking," but about recognizing that meeting a public's needs requires dialogue and understanding. The interactive feature of the Internet provides public relations practitioners a place to sponsor corporate social responsibility. Christians (1990) explored ethics and new technologies and argued that "convivial" technology was socially responsible because it:

> Respects the dignity of human work, needs little specialized training to operate, is generally accessible to the public, and emphasizes personal satisfaction and ingenuity in its use... **Convivial tools are dialogical:** they maintain a kind of open-ended conversation with their users. Because convivial tools conform to the desires and purposes of their users, rather than transform human desires to fit the shape of the tools, they can become true extensions of human subjects (p. 272, emphasis added).

Kent and Taylor (1998) argued that one must first understand dialogic communication in order to fully understand two-way symmetrical communication, which is one of the four models of public relations developed by Grunig and Hunt (1984). The two-way symmetrical model is the most desirable, according to Kent and Taylor, as it uses research to provide feedback from the publics to management in order to negotiate mutually beneficial outcomes.

Grunig and Hunt's (1984) four models describe how public relations is actually practiced and its contribution to organizations. The first and earliest model is the publicity/press agentry model, which aims for favorable publicity in the media and emphasizes generation of media coverage of an organization or individual by any means necessary. It is the most common form of public relations practices. The second model, the public information model, favors truthful disclosure of information to the media. It applies to programs that disseminate factual information through mass media and controlled media. This model is found most often in government agencies and scientific organizations. The publicity/press agentry model and the public information model are one-way models, which means that communication flows one way, from the organization through the mass media to target publics. The third model, which is known as the two-way asymmetrical model, uses research to gather feedback from the publics and develops persuasive message so as to change the behavior of publics or even manipulate them into compliance with the organization's objectives. Finally, the two-way symmetrical model uses research to provide feedback from the publics to management in order to negotiate mutually beneficial outcomes. Its public relations objective is understanding rather than persuasion.

Kent and Taylor (1998) viewed the relationship between two-way symmetrical communication and dialogic communication as one of process and product. They argued that "two-way symmetrical communication's theoretical imperative is to provide a procedural means whereby an organization and its publics can communicate interactively." Dialogic communication, however, refers to "a particular type of relational interaction - one in which a relationship exists" (p. 323). Kent and Taylor further explained that a dialogic relationship exists only when all parties involved in the communication process are contributing equally and are viewing communicating with each other as a goal. According to Kent and Taylor, communication should be an end itself rather than a means to an end.

As early as in the late 1970s, Johannesen (1971) outlined an emerging dialogic concept of communication. He characterized dialogue as genuine with accurate empathetic understanding, unconditional positive regard, presentness, spirit of mutual equality, and a supportive psychological climate. Stewart (1978) argued that dialogic communication "can lead to a reconceptualization of the phenomenon which is variously labeled 'relationship,' 'between,' or 'transaction' " (p. 198). Kent and Taylor (1998) applied the term "dialogic relationship" to describe the emerging model for interactive communication between an organization and its publics. They referred to dialogic communication as "any negotiated exchange of ideas and opinions" (p. 325).

According to Kent and Taylor, a dialogic loop has to be incorporated into Web pages and Web communication in order for public relations practitioners to create dynamic and lasting relationships with publics. Otherwise, Internet public relations becomes a new monologic communication medium or a new marketing technology.

Researchers have studied the interactive features of Web pages or interactivity that help corporations to practice dialogic communication with their publics. Ha and James (1998) proposed that interactivity refers to "the extent to which the communicator and the audiences respond to, or are willing to facilitate, each other's communication needs" (p. 460). According to Ha and James, there are five dimensions of interactivity in computer-mediated communication: The first dimension, **Playfulness**, refers to the entertainment value of the Web and includes features such as curiosity arousal devices and games. The second dimension, **Choice,** consists of the availability of choice and unrestrained navigation in cyberspace. This includes choice of color, speed, language, and other aspects of non-informational alternatives. The third dimension, **Connectedness,** refers to hypertexts or hyperlinks on Web sites. There are five types of hyperlinks, including product-related hyperlinks, company hyperlinks, third-party product-related hyperlinks, hyperlinks to non-product/company related information, and hyperlinks to other sites. The fourth dimension, **Information Collection,** includes monitoring mechanisms used to gather data, such as visitor registration, visitor counters, and cookie files. Finally, the **Reciprocal Communication** dimension refers to two-way or interactive response mechanisms such as e-mail addresses, contact telephone numbers, surveys or solicitation of comments from visitors, and other devices through which consumers could respond to the Web site owner.

Heeter (1989) outlined properties of new technologies that may require changes in traditional conceptualizations of mass communication and developed a new model of interactivity that consists of six dimensions:

1. **Complexity of Choice Available** (or **Selectivity**) refers to the extent to which users are provided with a choice of available information.
2. **Efforts Users Must Exert** concerns the amount of effort users must exert to access information.
3. **Responsiveness to the User** is the degree to which a medium can react responsively to a user.
4. **Monitoring Information Use** is the potential to monitor system use.

5. **Ease of Adding Information** is the degree to which users can add information to the system that a mass, undifferentiated audience can access.
6. **Facilitation of Interpersonal Communication** is the degree to which a media system facilitates interpersonal communication between specific users (pp. 222-225).

Ha & James (1998) and Heeter (1989) agreed that choice or selectivity is an important part of interactivity. This is understandable because this feature distinguishes computer-mediated communication from traditional mass communication that provides audiences much fewer choices of languages, speed, color, and other alternatives. They also agreed on information monitoring mechanisms and interactive response mechanisms.

McMillan (1998) operationalized the level of interactivity based on Heeter's (1989) model while measuring five dimensions of interactivity in health-related Web sites. 1. **Complexity of Choice**: number of links from the first page of the site and presence of a search engine. She presumed that a greater number of links is an indication of higher complexity of choice and considered a search engine as a representation of greater complexity of choice. 2. **Effort Users Exert**: tools provided to help users navigate the site, including menu bars and hot links that bring visitors directly back to the home page. 3. **Responsiveness**: feedback form. 4. **Monitoring of Information**: hit counter and publication date that suggest the level of attention site creators are paying to the visitors and the content of the site. 5. **Interpersonal Communication**: bulletin board and newsgroups.

McMillan (1998) included hyperlinks in the dimension of Choice while Ha and James (1998) classified it into the dimension of Connectedness. McMillan did not consider features such as choice of language, color, and speed. However, McMillan (2000) later did look at viewer choices such as language when she developed a scale to measure the interactive features of Web sites. She listed 13 features, including e-mail link, toll free number, registration form, survey/comment form, order/purchase form, bulletin board, chat room, search engine, viewer choice, curiosity devices, games, hit counter, and publication date.

Table 1. Interactivity Dimensions and Interactive Features of Web Pages

Ha & James (1998)	1. Playfulness (curiosity arousal devices, games) 2. Choice (color, speed, languages) 3. Connectedness (hyperlinks and hypertexts) 4. Information Collection (visitor registration, hit counters, cookie files) 5. Reciprocal Communication (email addresses, contact telephone, surveys, comments)
Heeter (1989)	1. Selectivity 2. Efforts users must exert 3. Responsiveness to the user 4. Monitoring information 5. Ease of adding information 6. Facilitation of interpersonal communication
McMillan (1998)	1. Complexity of Choice (hyperlinks, search engines) 2. Effort Users Exert (menu bars, hot links back to home page) 3. Responsiveness (feedback forms) 4. Information Monitoring (hit counters, publication date) 5. Interpersonal Communication (bulletin board, newsgroups)
McMillan (2000)	e-mail link, toll free number, registration form, survey/comment form, order/purchase form, bulletin board, chat room, search engine, viewer choice, curiosity devices, games, hit counter, and publication date

Summary

According to dialogic communication theory, dialogic communication is a particular type of relational interaction in which parties come to a relationship with openness and respect. Dialogue is product rather than process. Because of the nature of dialogic communication and its emphasis on a process of negotiated communication, it is considered to be an especially ethical way of conducting public relations. Dialogic communication is referred to as interactive communication in computer-mediated communication. Web site owners employ various interactive features of the Web to create effective dialogic relationships between the organizations and their publics.

Research on Corporate Web Pages

The World Wide Web has become an important tool for organizations to communicate with their publics interactively. The Internet has tremendous potential impact on individuals as well as organizations and has been subject to widespread research. Communications researchers have studied corporate Web pages to investigate corporate objectives for setting up Web pages. These researchers have primarily studied content features, commercial content, interactive communication strategies, issues management, agenda-setting strategies, and social responsibility reporting.

Liu et al. (1997) studied the content of Web pages of top American corporations to investigate the current status of 1994 *Fortune* 500 company home pages and to identify the ways in which these companies have responded to Web technologies. The results of their study showed that 64.4 percent of *Fortune* 500 companies had Web pages. The researchers found that firms that had higher market performances, measured by revenue, were more likely to use Web sites to reach their customers. They also found that industries in transportation, communications, electric, gas, and sanitary services, retail trade, manufacturing, finance, insurance, and real estate, and services had a larger number and higher percentage of companies that have Web pages, while industries in construction and mining had a very small percentage of Web pages.

Vattyam and Lubbers (1999) studied Web-based strategies of large U.S. firms to obtain insight on the current strategies adopted by U.S. business. They analyzed the home page features of a random sample of 1997 *Fortune* 500 companies and provided a profile of commercial use of the World Wide Web by these firms. Their results showed that 83 percent of the companies maintained Web sites under their corporate name. The main content or features of home pages were press releases, financial information, overview of the company, listings of products, and employment notices, which were present in almost 90 percent of the home pages. They also found that firms that had features for transaction also tended to have features for promotion and firms with features for promotion tended to have features for communication.

Esrock and Leichty (1998) analyzed a random sample of the Web pages of 1997 *Fortune* 500 companies to examine how large corporations are making use of the World Wide Web to present themselves as socially responsible corporate citizens and to promote their own policy positions. The authors identified 14 categories of content areas of social responsibility. The researchers found that 90 percent of the companies had a corporate Web site and 82 percent of the sites addressed at least one corporate social responsibility issue. The results suggested that the Internet had been accepted as an image-building public relations practice. The researchers concluded that Web pages were primarily utilized to disseminate corporate social responsibility information in much the same way as other traditional, one-way corporate communication vehicles and that the prominent model of corporate Web pages was top-down communication.

Using the same data from the previous study, Esrock and Leichty (1999) investigated types of publics served by corporate Web pages and the way Web sites meet the specific needs of new media. The corporations primarily used the Web to communicate with potential customers, the investment/financial community, and the news media. However, few pages were used to address internal audiences including employees and dealer/retailer networks. Most Web pages in this study had news releases, typically archiving back a year and a half. They also found that corporations using their Web pages to communicate to a broad range of publics also tended to disseminate a variety of information types through the Web. The researchers believed that this correlation between multiplicity of audiences and information variety suggested that cyberspace could increasingly become a "focal point for an organization's communication program." They concluded that major American corporations were only beginning to utilize the developing World Wide Web to disseminate information simultaneously to a multiplicity of publics through one medium, in a customized manner.

Gill (1999) observed that many corporations are realizing now that public relations can help foster a strong, positive corporate culture, which helps build a good corporate image. Corporate social responsibility in turn improves both corporate culture and image. Gill employed content analysis to examine the extent to which the corporate annual reports and Web sites of six corporations demonstrated social responsibility. The results showed that there was not enough evidence in the annual reports and Web sites of the six corporations to support a strong commitment to social responsibility as defined in the study.

Research Questions and Hypotheses

The literature review indicated that the World Wide Web has been accepted by corporations as a public relations tool to engage in dialogic communication with their publics. Yet, there is a lack of research on corporate Web usage for dialogic communication. Thus interactive features of the corporate Web pages is the focus of this study. As China is becoming an important player in the world market, Chinese businesses have committed efforts to promote their product and public images on the Internet. The literature suggests that U.S. large firms play a leading role in the use of information technology. We wonder if large Chinese firms also serve as leaders in the use of information technology and fully use the interactive features of the Internet to practice dialogic communication. As a result, the following questions make up this work:

1. How many Top 100 mainland China companies have a Web site?
2. What type of industries do these companies represent?
3. What interactive features do these corporate Web pages employ to engage in dialogic communication with their publics?

These descriptive questions address the general situation of the Chinese business Web sites. The literature also leads to the question, "Are a company's market value, industry type, and Web page interactive features related?"

Two hypotheses are generated from the above questions (as there are expected differences between the market values of different Industry types, the hypothesis tests will control for industry type):

H1: The larger the company within its industry, the more likely it has a Web site.

Rationale: Previous work (Liu et al., 1997) found that for American companies there was a dependent relationship between the presence of a home page and revenue. The higher-revenue companies are more likely to have a Web site. In this study, the size of the companies is measured by stock market value.

H2: There are significant differences between business types and the number of interactive features that the companies use to engage in dialogic communication with their audiences.

Rationale: Ha and James (1998) found significant differences between business types and their interactivity scores for American companies. They found that manufactured goods industry, services industry and retail outlets differed significantly on connectedness, information collection, and reciprocal communication dimensions of interactivity. Specially, manufactured goods were more likely than service and retail outlets to contain monitoring devices, response devices, and better integration of hyperlinks.

METHODOLOGY

The method of content analysis was used to analyze the CSR areas addressed on Web pages of the top Chinese firms. The author and another trained coder conducted the coding, using the definitions discussed below. Because not all the Web pages have an English version, which is usually much simpler than the Chinese language version, only the Chinese language version was coded.

Population and Sample

The Web pages of the top 100 mainland Chinese firms were content analyzed. These companies are all state-owned enterprises and all sell stock in China. *Yazhou Zhoukan*, a Hong Kong magazine with a worldwide distribution of 98,447 copies, provided the top 100 list and summary information about the companies' locations, main business, market values, profits, and total assets. As the world's only international Chinese news weekly, *Yazhou Zhoukan* provides weekly coverage and analysis of the world's major events in politics, business and culture from a Chinese perspective, reflecting Chinese values, traditions and priorities. Every year since 1994, *Yazhou Zhoukan* has ranked the "Top 100 Listed Enterprises in mainland China" by their market value. The list is kind of a Chinese version of *Fortune* 500. The top 100 companies were ranked by market value of their class A common stock, which is issued only to Chinese citizens, as of June 30, 1999.

Previous studies (Li, McLeod & Rogers, 1993; McLeod & Rogers, 1982) show that American top companies (*Fortune* 500) usually provide leadership in the use of information technology. As there is lack of research on Chinese companies, it is assumed in this study that top Chinese companies also serve as leaders among Chinese businesses in the use of information technology. It has to be noted that *Fortune* 500 companies are ranked by their revenue, not market value.

Locating Web sites

Two sources were used to locate and examine Web pages: Sohu (http://www.sohu.com.cn) and Yahoo! China (http://cn.Yahoo.com). These two sites are considered to have the best search engines and the richest data on various Chinese topics (Einhorn et al., 1999; Madden, 1999). Yahoo! China contains links to more than 40,000 Chinese-language Web sites (Hanley, 1999). A searchable database of each firm's name list and Web site and email address is available on Sohu's China Listed Companies (http://www.listcom.com.cn). The search engine can search a company by its stock number or the company's name. This site also provides a direct link to those companies that have a Web site. For those companies that were not linked to the Sohu site, a search was conducted using the search engine on Yahoo! China. The initial data were collected and validated between June 10, 2000, and August 10, 2000, by searching both Sohu and Yahoo! China on a company name search.

Pilot Study

A pilot study was conducted on May 7, 2000. Five randomly selected Web sites were coded. Most of the content in these sites was used for marketing and investor relationships. Only one site had an 800 toll-free number. The toll-free number is not very popular in China, where only a few cities have toll-free telephone service. However, toll-free number remained a category of dialogic communication in order to determine how many companies provide this feature.

During the pilot study, the author noticed that many sites had "friendship links," i.e., hyperlinks to other sites. Therefore, a new category "friendship links" was added to the interactive feature categories of previous authors.

Industry Types

China might categorize industry type in a different way from the United States. However, an American category framework was used because it is easier for American readers to understand and permits comparison with prior studies of U.S. businesses. The categories of industry types and definitions (see Appendix 1) were adopted from the Occupational Safety and Health Administration (OSHA) of the U.S. Department of Labor (http://www.osha.gov/cgi-bin/sic/sicser5).

During the tests of the hypotheses, the industry types were collapsed into two groups, manufacturing and non-manufacturing, due to the overwhelming number of cases (63%) in the category of manufacturing.

Market Value

As noted, the top 100 companies in mainland China were ranked by the market value of their class A common stock as of June 30, 1999. The market value was reported in U.S. dollars. The information was from *Yazhou Zhoukan*, which listed the market value both in Chinese RMB and U.S. dollars. The publication explained that the U.S. value was calculated according to the exchange rate on June 30, 1999. As mentioned, *Yazhou Zhoukan* is a Chinese version of *Fortune* 500. The China National Information Center and China Economic Information Network (Hong Kong) Co. Ltd. helped *Yazhou Zhoukan* collect and compute the data.

During the tests of the hypotheses, the top 100 firms were divided into three categories based on their market value as of June 30, 1999: above $345 million, between $270 and $345 million, and below $270 million. As the market values of most of these companies were very close, the sample was simply divided into three groups by nearly equal numbers of companies (33, 34, 33).

Initial Data Coding

The coding was conducted between June 10, 2000, and August 10, 2000. Once the Web site was located, the features in the coding scheme were searched for on the homepage and on all the pages within the initial URL that could be reached through links off the homepage. However, if a corporation had a link to a subsidiary and the first portion of the URL for that entity was different from the parent firm, the subsidiary's page was not included in the analysis. Data on the top 100 mainland Chinese companies were coded into several categories. Only the Chinese language version was coded because the English version usually contained much less information and not all the Web pages had an English version. The researcher and the other trained coder are native speakers of Chinese and also have reliable English-Chinese and Chinese-English dictionaries. Because the corporate Web usage changes rapidly and it was hard for the two coders to code the same Web page at exactly the same time, the author first recorded the content features on a form (see Appendix 2); then both coders coded them into the respective categories.

Reliability

The average of all the correlations was highly reliable (.95 with 95% confidence), suggesting that the coding scheme is reliable and the definitions are very clear.

Interactive features of Web pages

McMillan's (2000) 13 categories of interactive features were used as a framework to measure the dialogic communication strategies corporations used on their Web pages. Her categories are the most recent and are comprehensive and specific. As noted, based on the results of a pilot study, an additional unit, friendship links, was added to McMillan's 13 categories. By "friendship links," the author means hyperlinks to other sites such as major newspapers, related business sites other than the company's subsidiaries, and other popular sites.

Ha and James (1998) argued that hyperlinks in Web sites provide visitors a feeling of connectedness to the world and thus fulfill their individual information needs and generate trust in the companies they are visiting. Therefore, connectedness is an important dimension of interactivity. Friendship links reflect the level of connectedness of a Web page. A category "other" is included to record commonly used features other than McMillan's 13 categories on these Chinese Web sites. During the data collecting, the researcher found that "other" represented exclusively a site map, which made it convenient for visitors to obtain an overview of the main content features. Thus, "site map" replaced "other" during the analysis.

Table 2. Interactive Features Used for Dialogic Communication

1. E-mail link
2. Toll free number
3. Registration form
4. Survey/comment form
5. Order/purchase form
6. Bulletin board (asynchronous)
7. Chat room (synchronous)
8. Search engine
9. Viewer choice (e.g. language, flash skip)
10. Curiosity devices (e.g. Q&A)
11. Games
12. Hit counter
13. Publication date
14. Friendship links
15. Other (site map)

Source: McMillan, S. J. (2000).

Analysis Methods

Data were analyzed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics were used to calculate percentages of Web pages having each of the content features. The hypotheses were tested as follows. In all analyses, alpha = .05.

Hypothesis 1:

Hypothesis 1 stated that the larger the company, the more likely it has a Web site, controlling for industry type. This hypothesis was tested by a chi-square test for independence, with industry type as a control factor.

$$f_{Sl} > f_{Sm} > f_{Ss}$$

Hypothesis 2:

Hypothesis 2 stated that there are significant differences between business types and the number of interactive features the companies use to engage in dialogic communication with their audiences. Because the number of business types had been reduced to two, hypothesis 3 was tested with an Independent-Samples t-test.

$$\mu_{mfg} \neq \mu_{nonmfg}$$

RESULTS

A total of 53 Web sites were found through the two search methods. Two firms had links to their sites, but there was no content because the sites were under construction. Eleven firms had their URL address listed in the database on www.sohu.com, but the sites were unavailable. Thirty four other companies did not maintain Web sites under their corporate name. Table 3 reports the types of industries the *Yazhou Zhoukan* Top 100 Chinese companies represented and descriptions of the firms with and without Web pages both by industry type and by proportion of firms with Web pages.

Table 3. Types of Industries Represented by the Top 100 Chinese Companies (n=100)

Type of industry	Number of firms		Proportion of firms with Web pages (n=53)
	Total	With pages (within industry type)	
Manufacturing	63	38 (60.3%)	71.7%
Finance, insurance & real estate	9	5 (55.6%)	9.4%
Construction	4	2 (50%)	3.8%
Wholesale trade	2	1 (50%)	1.9%
Transportation, communications, electric, gas & sanitary services	17	6 (35.3%)	11.3
Agriculture, forestry, and fishing	4	1 (25%)	1.9%
Nonclassifiable establishments	1	0 (0%)	0%
Total	100	53	100%

As Table 3 indicates, these 100 firms fall into the OSHA divisions A through K; sixty three were manufacturing firms, seventeen belonged to division E (transportation, communications, electric, gas, and sanitary services), nine were finance and real estate, four were construction and agriculture each, two wholesale trade and one comprehensive (nonclassifiable). Manufacturing had the greatest proportion of an industry with Web pages (60%) as well as the greatest proportion of the companies with Web pages overall (72%).

Interactive Features

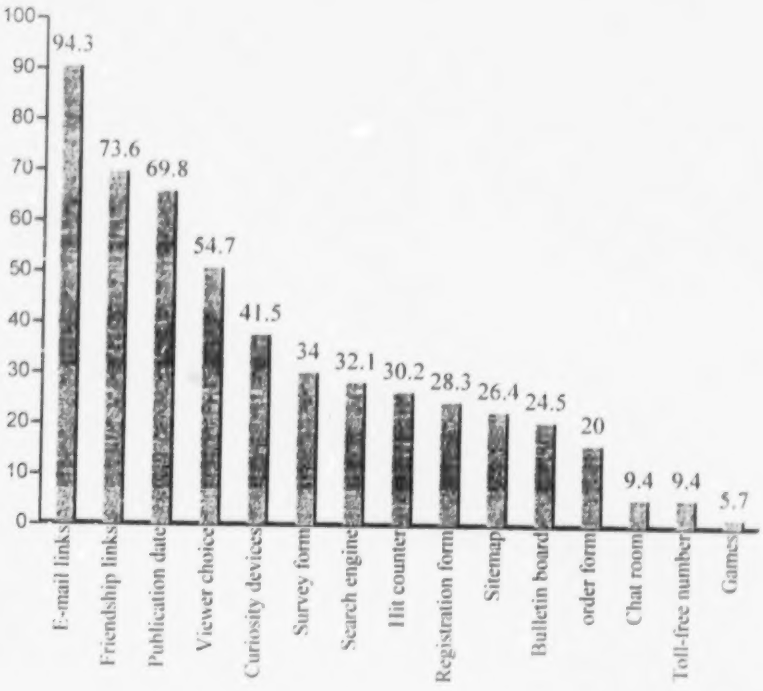
The 53 companies with Web pages were also examined for their use of interactive Web features to engage in dialogic communication with their online visitors. Among these 53 Web sites,

- 94 percent of the sites had e-mail links.
- 74 percent of the sites provided hot links to other sites.
- 70 percent displayed publication date, which included news releases issue date, copyright year, or the date when the site was last revised.
- 55 percent had an English version, although it usually contained much less information than the Chinese language version. One site had a version in Spanish.
- 42 percent offered curiosity devices that were used to attract browsers to revisit the site. These devices include frequently asked questions, knowledge about how to select good quality products and how to maintain the product, downloadable software and images, and electronic greeting cards.
- Roughly one third of these sites included survey/comment forms (34%), search engines (32%), a hit counter (30%), and registration forms (28%).
- About one quarter of the sites had a site map or a help link (26%), a bulletin board (25%), and order forms (20%).
- Nine percent had a chat room or a toll-free number.

- Finally, only six percent of the firms had games on their Web pages.

The percentages of the interactive features are presented in Figure 1. The number of interactive features used per site ranged from 0 to 12. The average number of interactive features per site was 5.53. In manufacturing industries the average number was 6.13, and in non-manufacturing, 4.

Figure 1. Percentages of Interactive Features (n=53)

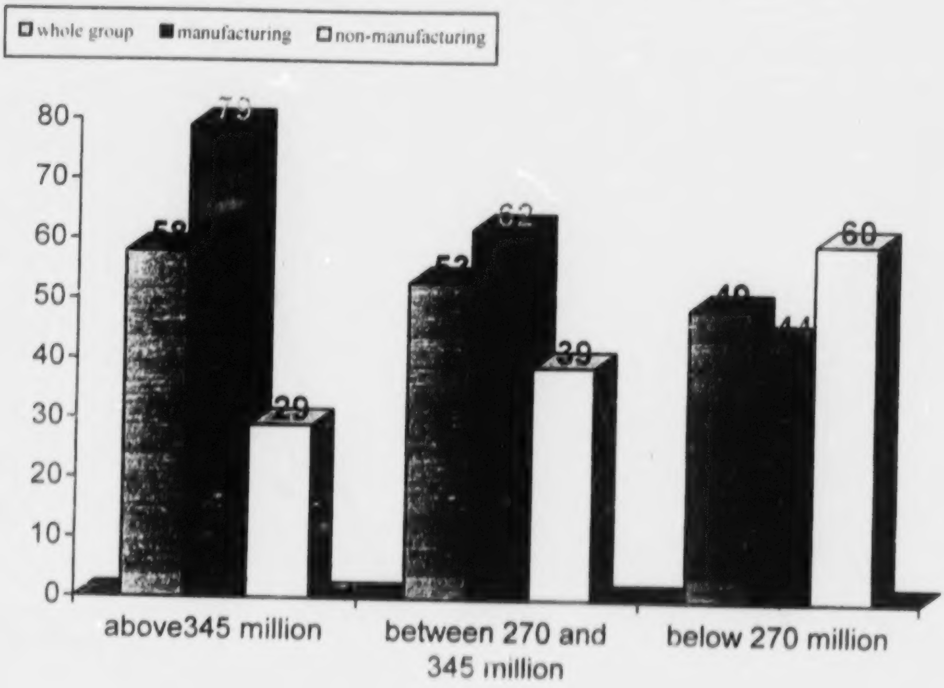


Hypothesis 1:

Hypothesis 1 stated that the larger the company, the more likely it has a Web site, controlling for industry type. Hypothesis 1 was tested by a chi-square test for independence, with industry type as a control factor. Fifty eight percent of the 33 companies whose market value was above $345 million, 53 percent of the 34 companies whose market value was between $270 and

$345 million, 49 percent of the 33 companies whose market value was below $270 million had a Web site. Figure 2 shows the percentages of Web site based on market value.

Figure 2. Percentages of Web Site by Market Value (n=100)



Raw data indicated that higher market value companies were more likely to have a Web site, but the difference was not supported by the chi-square test for independence (p >.05). When industry type was controlled, the relationship between market value and Web presence was still not significant (see Table 4). However, manufacturing showed same pattern as the raw data and approached significance (p=.06), but was not significant at the .05 level. Further exploration of the data indicated that for manufacturing industries the largest companies had significantly more Web sites than the smallest companies.

estate, which accounted for nine percent. Only 23 percent of the Web pages had online business services. Frequently used interactive features included e-mail links, friendship links, publication date, and viewer choice of languages. Around one-third of the firms had curiosity devices, survey and registration forms, search engines, hit counters, and site maps. Most of the firms in the sample of large Chinese companies use their Web pages to announce their cyberspace presence, to provide customers with useful information, to attract visitors to browse their products and services, and to collect responses from visitors or customers.

Dialogic Communication

The corporate Web pages under this study had high levels of reciprocal communication and connectedness (94.3% had e-mail links and 73.6% had friendship links). The number of sites (55%) that had an English version demonstrated that these Chinese corporations are making efforts in attracting international investments. The level of information collection on the sites was relatively good (around one third had survey/comment forms, a hit counter, and registration forms). These firms provided relative convenience for visitors to browse their Web pages by setting up search engines and site maps. The level of dialogic interpersonal communication was low (only one fourth had bulletin boards, 10% had chat rooms), compared to the other interactivity dimensions such as connectedness and information collection. The level of playfulness was mixed: nearly half offered curiosity devices such as FAQ and electronic greeting cards, while only five percent had games on their Web pages. These findings tell us that big Chinese corporations were trying to fully use the advantages of the Internet to provide their customers with as much information as possible and also collect as much feedback from their visitors as they could. Although to some degree these firms used the two-way asymmetric communication model, they still need to expand their efforts to increase dialogic communication with their publics. Some companies used survey or comment forms to collect feedback from visitors, but only a few set up chat rooms or bulletin boards to engage in dialogues with their publics. In addition, these Web sites indicated that most of the bulletin boards and chat rooms were not monitored by the public relations staff of the company. These companies should increase feedback collection. They also need to publish the survey results and report their improvement efforts based on the survey results. Dialogues with and among visitors should be monitored and guided by public relations professionals.

Market Value, Industry Type, Web Presence, and Interactive Features

The raw data showed that companies of higher market value overall were more likely to have a Web site, although the differences were not significant. However, when industry type was controlled, the pattern for manufacturing firms approached significance ($p = .06$). The raw data showed that industries in manufacturing had the largest number and highest percentage of companies that had Web pages. The manufacturing industry firms had significantly more interactive features on company Web pages than the non-manufacturing industry companies.

Conclusions

As described above, the size of the company indicated by market value was not related to the likelihood of having a Web site. However, the relationship approached significance for manufacturing companies. A larger sample might detect a difference. The results showed that manufacturing firms had more interactive features on their Web pages. Many of these manufacturing firms produce household appliances or electronic products such as computers, and therefore they have more and a wider range of customers. Thus it was not surprising to find that the Web pages of these firms had more interactive features such as email links, survey forms, and bulletin boards. The online marketing potential of the World Wide Web was underutilized by these Chinese enterprises, which supported the findings of Liu's (1997) study of U.S. firms.

Limitations and Recommendations

The present study has several limitations. First, the findings of this study are limited to one special group, the top 100 mainland Chinese companies ranked by market value of their class A common stock as of June 30, 1999. Second, because corporate use of the Web and the content of the Web pages are changing rapidly, these findings are time-bound and may not represent current or future status. Third, because of lack of previous research, the study uses American researchers' findings and analysis frameworks as guidelines, which might not be proper for Chinese businesses.

It also has to be noted that the findings only show how these Chinese firms portray themselves as socially responsible corporate. The current project did not involve other methods such as surveys or interviews with these companies' Web master or public relations staff. Thus the results might have not reflected the actual performance of these firms.

The present research suggests several recommendations for future studies. First, a larger sample with a variety of industry types would better illustrate the current situation of Chinese corporate Web usage. A thorough study of Chinese corporate culture would generate a better analysis framework and coding scheme for the research. Also, more research on Chinese industry might better explain the research results.

If possible, a survey and/or in-depth interviews of the Web masters of these Web sites would shed light on how corporations understand the public relations functions of corporate Web pages and what they believe are important interactive features that should be used on the Web. This would also help develop a category frame appropriate for Chinese corporations. Public relations professionals should continue to conduct research on Internet development and corporate use of the Web so as to help corporations improve their public relations image in cyberspace and facilitate dialogic communication with their publics.

REFERENCES

Christians, C. G. (1990). Social responsibility: Ethics and new technologies. In R. L. Johannesen (Eds.), *Ethics in human communication* (pp. 265-278). Prospect Heights, IL: Waveland.

Country Commercial Guide. [Online]. Available: http://www.state.gov/www/about_state/business/com_guides/1999/eastasia/china99_07.html. [May 5, 2000].

Einhorn, B., & Roberts, D. (August 2, 1999). China's Web masters. *Business Week*, 48-51. Retrieved on April 10, 2000 from ProQuest Direct-ABI/INFORM on-line database.

Esrock, S. L., & Leichty, G. B. (1998). Social responsibility and corporate Web pages: Self-presentation or agenda-setting? *Public Relations Review*, 24, 305-319.

Esrock, S. L., & Leichty, G. B. (1999). Corporate World Wide Web pages: Serving the news media and other publics. *Journalism & Mass Communication Quarterly*, 24, 456-467.

Gill, K. (1999). Do corporate annual reports and Web sites support a commitment to social responsibility? [Online]. Available: http://list.msu.edu/archives/aejmc.html [March 25, 2000].

Grunig, J. E., & Hunt, T. (1984). *Managing public relations*. New York, NY: Holt Reinhart and Winston.

Ha, L., & James, E. L. (1998). Interactivity reexamined: A baseline analysis of early business Web sites. *Journal of Broadcasting & Electronic Media*, 42, 457-474.

Half of China's Internet users surf at homes. Xinhua News Agency. (January 26, 2000). Retrieved on April 10, 2000 from INFOTRAC on-line database (General BusinessFile ASAP, Article A59003733).

Hanley, C. (October 18, 1999). Yahoo struggles to become China provider. InfoWorld, 21 (42), 54a. Retrieved on April 10, 2000 from ProQuest Direct-ABI/INFORM on-line database.

Heeter, C. (1989). Implications of new interactive technologies for conceptualizing communication. In J.L. Salvaggio and J. Bryant (Eds.) *Media use in the information age: Emerging patterns of adoption and computer use* (pp. 221-225). Hillsdale, NJ: Lawrence Erlbaum Associates.

Johannesen, R. L. (1971). The emerging concept of communication as dialogue. *Quarterly Journal of Speech*, 57, 337-382.

Kent, M. L., & Taylor, M. (1998). Building dialogic relationships through the World Wide Web. *Public Relations Review*, 24, 321-334.

Lawrence, W. (1996). Internet rewrites rules of public relations game. *Public Relations Tactics*, 3, 20.

Leeper, K. A. (1996). Public relations ethics and communitarianism: A preliminary investigation. *Public Relations Review*, 22, 163-179.

Li, E. Y., McLeod, R., & Roger, J. C. (1993). Marketing information systems in the *Fortune* 500 companies: Past, present, and future. *Journal of Management Information System*, 10(1), 165-192.

Liu, C., Arnett, K. P., Capella, L. M., & Beatty, R. C. (1997). Web sites of the *Fortune* 500 companies: Facing customers through home pages. *Information & Management*, 31, 335-345.

Madden, N. (Oct. 1999). Yahoo! hits China amid uncertainty. *Advertising Age International*. Retrieved on April 10, 2000 from INFOTRAC on-line database (Expanded Academic ASAP, Article A57237922).

McLeod, R., & Roger, J. C. (1982). Marketing information systems: Uses in the *Fortune* 500. *California Management Review*, 25, 106-118.

McMillan, S. J. (1998). Who pays for content? Funding in interactive media. *Journal of Computer-Mediated Communication*, 4(1), [Online]. Available: http://www.ascusc.org/jcmc/vol4/issue1/mcmillan.html [April 16, 2000].

McMillan, S. J. (2000). What is interactivity and what does it do? Paper presented at the AEJMC 2000 Annual Conference in Phoenix, AZ.

McMillan, S. J., & Downes, E. J. (2000). Defining Interactivity: A qualitative identification of key dimensions. *New Media and Society*, 2, 157-179.

Pearson, R. (1989). Business ethics as communication ethics: Public relations practice and the idea of dialogue. In C. Botan and V. Hazleton, Jr. (Eds.), *Public relations theory* (pp. 111-131). Hillsdale, NJ: Lawrence Erlbaum Associates.

Stewart, J. (1978). Foundations of dialogic communication. *Quarterly Journal of Speech*, 64, 183-201.

Vattyam, S., & Lubbers, C. A. (1999). A content analysis of the Web pages of large U.S. corporations: What is the role of public relations and marketing? Paper presented at the AEJMC 1999 Annual Conference in New Orleans, LA. [On line]. Available: http://list.msu.edu/cgi-bin/wa?A2=ind9909b&L=aejmc&F=&S=&P=7081. [March 1, 2000]

Appendix I. SIC Division Structure

A. Division A: Agriculture, Forestry, And Fishing
  Major Group 01: Agricultural Production Crops
  Major Group 02: Agricultural Production Livestock And Animal Specialties
  Major Group 07: Agricultural Services
  Major Group 08: Forestry
  Major Group 09: Fishing, Hunting, And Trapping
B. Division B: Mining
  Major Group 10: Metal Mining
  Major Group 12: Coal Mining
  Major Group 13: Oil And Gas Extraction
  Major Group 14: Mining And Quarrying Of Nonmetallic Minerals, Except Fuels
C. Division C: Construction
  Major Group 15: Building Construction General Contractors And Operative Builders
  Major Group 16: Heavy Construction Other Than Building Construction Contractors
  Major Group 17: Construction Special Trade Contractors
D. Division D: Manufacturing
  Major Group 20: - Food And Kindred Products
  Major Group 21: Tobacco Products
  Major Group 22: Textile Mill Products
  Major Group 23: Apparel And Other Finished Products Made From Fabrics And Similar Materials
  Major Group 24: Lumber And Wood Products, Except Furniture
  Major Group 25: Furniture And Fixtures
  Major Group 26: Paper And Allied Products
  Major Group 27: Printing, Publishing, And Allied Industries
  Major Group 28: Chemicals And Allied Products
  Major Group 29: Petroleum Refining And Related Industries
  Major Group 30: Rubber And Miscellaneous Plastics Products
  Major Group 31: Leather And Leather Products
  Major Group 32: Stone, Clay, Glass, And Concrete Products
  Major Group 33: Primary Metal Industries
  Major Group 34: Fabricated Metal Products, Except Machinery And Transportation Equipment
  Major Group 35: Industrial And Commercial Machinery And Computer Equipment
  Major Group 36: Electronic And Other Electrical Equipment And Components, Except Computer Equipment
  Major Group 37: Transportation Equipment
  Major Group 38: Measuring, Analyzing, And Controlling Instruments; Photographic, Medical And Optical Goods; Watches And Clocks
  Major Group 39: Miscellaneous Manufacturing Industries
E. Division E: Transportation, Communications, Electric, Gas, And Sanitary Services
  Major Group 40: Railroad Transportation
  Major Group 41: Local And Suburban Transit And Interurban Highway Passenger Transportation
  Major Group 42: Motor Freight Transportation And Warehousing
  Major Group 43: United States Postal Service
  Major Group 44: Water Transportation
  Major Group 45: Transportation By Air
  Major Group 46: Pipelines, Except Natural Gas
  Major Group 47: Transportation Services
  Major Group 48: Communications
  Major Group 49: Electric, Gas, And Sanitary Services
F. Division F: Wholesale Trade
  Major Group 50: Wholesale Trade-durable Goods
  Major Group 51: Wholesale Trade-non-durable Goods

G. Division G: Retail Trade
  Major Group 52: Building Materials, Hardware, Garden Supply, And Mobile Home Dealers
  Major Group 53: General Merchandise Stores
  Major Group 54: Food Stores
  Major Group 55: Automotive Dealers And Gasoline Service Stations
  Major Group 56: Apparel And Accessory Stores
  Major Group 57: Home Furniture, Furnishings, And Equipment Stores
  Major Group 58: Eating And Drinking Places
  Major Group 59: Miscellaneous Retail
H. Division H: Finance, Insurance, And Real Estate
  Major Group 60: Depository Institutions
  Major Group 61: Non-depository Credit Institutions
  Major Group 62: Security And Commodity Brokers, Dealers, Exchanges, And Services
  Major Group 63: Insurance Carriers
  Major Group 64: Insurance Agents, Brokers, And Service
  Major Group 65: Real Estate
  Major Group 67: Holding And Other Investment Offices
I. Division I: Services
  Major Group 70: Hotels, Rooming Houses, Camps, And Other Lodging Places
  Major Group 72: Personal Services
  Major Group 73: Business Services
  Major Group 75: Automotive Repair, Services, And Parking
  Major Group 76: Miscellaneous Repair Services
  Major Group 78: Motion Pictures
  Major Group 79: Amusement And Recreation Services
  Major Group 80: Health Services
  Major Group 81: Legal Services
  Major Group 82: Educational Services
  Major Group 83: Social Services
  Major Group 84: Museums, Art Galleries, And Botanical And Zoological Gardens
  Major Group 86: Membership Organizations
  Major Group 87: Engineering, Accounting, Research, Management, And Related Services
  Major Group 88: Private Households
J. Division J: Public Administration
  Major Group 91: Executive, Legislative, And General Government, Except Finance
  Major Group 92: Justice, Public Order, And Safety
  Major Group 93: Public Finance, Taxation, And Monetary Policy
  Major Group 94: Administration Of Human Resource Programs
  Major Group 95: Administration Of Environmental Quality And Housing Programs
  Major Group 96: Administration Of Economic Programs
  Major Group 97: National Security And International Affairs
K. Nonclassifiable Establishments

Source: Occupational Safety & Health Administration, U.S. Department of Labor. Online, available at http://www.osha.gov/cig-bin/sic/sicser5

Appendix 2. Data Analysis Chart

Interactive Features

Company Name (rank)
Date of Site Review
Industry Type (SIC)
Size (market value)

Components	Presence	Comments
Interactive Features		
E-mail link		
Toll free number		
Registration form		
Survey/comment form		
Order/purchase form		
Bulletin board		
Chat room		
Search engine		
Viewer choice		
Curiosity devices		
Games		
Hit counter		
Publication date		
Friendship links		
Other		

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INVESTIGATING DIALOGIC COMMUNICATION: A CONTENT ANALYSIS OF TOP CHINESE CORPORATE WEB PAGES

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ABSTRACT

The study investigated the current status of Web usage by large Chinese firms, especially the way these firms use their Web pages to support dialogic communication with their publics. Frequently used interactive features included e-mail links, friendship links, publication date, and viewer choice of languages. Around one-third of the firms had curiosity devices, survey and registration forms, search engines, hit counters, and site maps. Manufacturing firms had more interactive features on their Web pages.

Key words: dialogic communication, interactive, Web pages, Chinese corporate

PREDICTING ONLINE SHOPPING BEHAVIOR

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PREDICTING ONLINE SHOPPING BEHAVIOR

The exponential growth in the number of World Wide Web users during the last few years has resulted in a large base of potential clients for consumer online retailers. A recently released report by the Pew Internet Project (Rainie & Packel, 2001) reports that the number of American adults accessing the Internet grew to more than 104 million in the second half of the year 2000 (Rainie & Packel, 2001). The largest growth in the Internet was among white men, 30-49 years old, primarily parents of children under 18, making $50,000-70,000 per year, and who hold at least one college degree (Rainie & Packel, 2001).

As the number of Internet users grows, so is the volume of online shopping. ActivMedia Research reported in the *Internal Auditor* that online shopping increased by 46% in the year 2000, with a sales total of $56 billion (Scott, 2001). This is good news for the multitude of online retailers who have been struggling to stay afloat in the midst of a fury of bankruptcies. The demise of many online retailers during the last year is due to the impatience of investors who no longer wished to support potential revenues that never seemed to materialize (Mandel & Hof, 2001). Their demise was also due to predatory competition among retailers offering similar products but ferociously nibbling at a relatively small initial base of consumers who were comfortable enough to make purchases online (Ebenkamp, 2001; and Hof, 2001).

The purpose of this study is to determine the factors that affect an online user's decision to make an online purchase. Understanding what influences online shopping is useful at a theoretical level as it adds knowledge about a specific dimension of contemporary human behavior. Such an understanding is also very useful at a practical level, as it assists online retailers in their quest to encourage online users to purchase consumer goods online.

LITERATURE REVIEW

Online shopping is a relatively recent occurrence since a graphical browser for the World Wide Web, itself, was introduced only in 1993. As a result, there are a relatively small number of published academic studies concerning online shopping and no particularly relevant theories to build upon. It is important, however, to use prior research as a basis for building our hypotheses and research questions so that theories can be built in the future. Thus, the following paragraphs will first review the body of available literature about online shopping. For those relationships in which we are interested but that are not investigated by the recent studies about online shopping, we will also review the findings of investigations about more traditional shopping, in order to better formulate our hypotheses concerning online shopping.

Korgankar and Wolin (1999) studied the factors that affect Web usage. They reported that demographic factors, such as gender and age, seem to predict whether consumers shop online. Their study also found that men were more likely than women to shop online. Further, the older Web users were, the more likely to shop online. In addition to gender and age, income was positively correlated with the frequency of shopping online. Korgankar and Wolin (1999) also studied motivational and attitudinal factors about Web usage. They found that those who use the Web for social escapism purposes, self-education purposes, personalization purposes, socialization purposes, or economic gain, spend more hours per day on the Web. Korgankare and Wolin (1999) also reported that frequent Web purchasers are more likely to use the Web for social escapism, economic shopping incentives, and interactive control features.

Donthu and Garcia (1999) also studied online shoppers, finding that online shoppers surf the Web more often than those who do not shop online. They found that online shoppers are more innovative and impulsive, more convenience and variety oriented, less risk averse, and less brand and price conscious. Online shoppers tend to look for products to satisfy their needs without regard to the price of doing so. Online shoppers also have more positive attitudes towards advertising and direct marketing than non-online shoppers. However, online shoppers do not necessarily have a more positive attitude toward shopping in general.

Previous studies on general shopping behaviors also give us some insights into the factors that might affect online shopping. Sherman, Mathur and Smith (1997) studied how emotional states of a consumer might affect his/her purchase behavior. They concluded that social factors (such as liveliness and cheerfulness) and design of store environment have a positive impact on the pleasure (such as happiness and satisfaction) of shopping. Furthermore, their study found that the pleasure and arousal associated with shopping have a positive impact on the amount of money spent during shopping. (Sherman, Mathur & Smith, 1997).

Fisher and Arnold (1994) looked at the role of gender and gender identity in shopping attitudes. They found that, in general, women enjoy the task of shopping more than men. Evans, Christianson, and Gill (1996) evaluated the shopping behaviors of women working outside of the home and those working inside the home. Their results showed that women who work outside the home were more likely than men to enjoy shopping and to view shopping as an opportunity to socialize. They also strongly preferred reasonable prices, up to date fashions and styles, more business attire, helpful store displays, and convenient locations near place of employment.

Since online shopping is a high-tech version of traditional catalog shopping, it is also useful to review what we know about catalog shoppers. Jasper and Lan (1992) found that as age increases, tendency to catalog shop also increases. They also discovered that better educated shoppers are more likely to shop via catalog than those with less education. When looking at the psychographics of catalog shoppers, they found that frequent catalog shoppers are more likely to perceive the benefits of shopping convenience than infrequent catalog shoppers.

Eastlick and Feinberg (1999) also studied the behavior of catalog shoppers. They found that catalog shopping was dominated by three functional motives: 1) perceived value, meaning that the retailer stands behind their merchandise, it is easy to exchange purchases, products are dependable, and value is good for the money; 2) features of order services, including the availability of a toll-free number and credit; 3) convenience, which involves the consumer finding what he/she wants in the least time with the least amount of effort at any time of day.

The findings of the articles reviewed above suggest that several variables might be able to predict a likelihood to shop online: demographic variables such as gender, age, income, education, and working hours; personal traits such as impulsiveness and risk aversion; motivational factors such as convenience, and perceived value; attitudinal factors such as attitudes towards advertising and general attitudes toward shopping.

RESEARCH QUESTIONS AND HYPOTHESES

This study's general research question is:

RQ: What are the factors that predict online shopping?

Based on the results of the literature review, we can draw the following hypotheses:

H1: There is a difference between men and women in terms of their likelihood to shop online.

H2: The older is a Web user, the more likely he/she is to shop online.

H3: The higher the income of a Web user, the more likely he/she is to shop online.

H4: The higher the education level of a Web user, the more likely he/she is to shop online.

H5: The higher the number of hours a Web user work per week, the more likely he/she is to shop online.

H6: The more of an impulsive shopper a Web user is, the more likely he/she to shop online.

H7: The less concerned an online shopper is about the security of transacting online, the more likely he/she is to shop online.

H8: The more a Web user perceives shopping online to be convenient, the more likely he/she is to shop online.

H9: The more a Web user perceives shopping online to save him/her money, the more likely he/she is to shop online.

H10: The more positive a Web user's attitude is toward advertising, the more likely he/she is to shop online.

H11: The more positive a Web user's attitude is toward online shopping, the more likely he/she is to shop online.

H12: The more a Web user uses the Internet, the more likely he/she is to shop online.

METHODOLOGY

This study consisted of a 10-minute telephone survey of Massachusetts households, conducted between October 18, 2000, and November 5, 2000. The information below first describes the sampling procedures then discusses the development and pre-testing of the measures.

Sampling Procedures

This study utilized a Random Digit Dialing (RDD) probability sample, stratified for every county in the State of Massachusetts. The sample was purchased from the leading vendor of probability RDD samples for government and industry studies. The sample was imported into WinCati, a computer-assisted-telephone-interviewing (CATI) software program, which was used for managing this project's sample. This software was programmed to schedule up to 10 callbacks for no answers before removing a particular phone number from the active call list. The survey was conducted by the research center of a large university located in the Northeast. The survey center consisted of thirty-three CATI workstations. Interviewers were carefully screened and trained. In addition, their performance was closely monitored for controlling the quality of the data collection procedures.

The original RDD sample pool received from the vendor consisted of 8,806 phone numbers. Of those, 2,490 resulted in contacts with qualified respondents. Qualified respondents, for this study, were considered to be household members, 18 years of age or older. Past experience doing surveys in the State of Massachusetts had shown the present research team that telephone survey respondents in RDD samples are distributed in a manner that approximates the demographic properties of the population of the State. To shorten the duration of the survey and maximize response rate, no within household randomization was performed (for a discussion of tradeoffs, see Lavrakis, 1993).

Of the 2,490 contacts with eligible respondents, 1,615 resulted in refusals and 875 resulted in respondent cooperation (*N*=875). The response rate for this study was therefore 35%. We used AAPOR's definition of Cooperation Rate 4 for arriving at this response rate (see AAPOR, 2000). It is important to note that this figure is relatively low in comparison to the response rates reported during the 1970s and 1980s but much above the average of 16% for contemporary RDD telephone surveys as reported by the survey research industry (see Marketing Research Association, 2000). This study's response rate is very consistent with the downward trend in RDD telephone survey response rates witnessed by the survey research industry during the last five years, which may mostly be attributed to the exponential growth in telemarketing calls.

DEVELOPMENT OF MEASURES:

A literature search was first conducted to find studies that included variables similar to the ones we needed to measure: consumer attitudes towards the Internet, shopping in general, and online shopping. Our objective was to find previous measures for these variables that we might be able to adopt or adapt in our own instrument. The search resulted in several useful scales. For example, a study by Korgaonkar and Wolin (1999) included measures of motivations for using the Web. Another study by Donthu and Garcia (1999) provided us with measures that assess attitudes toward shopping, direct marketing, advertising, brand and price consciousness, risk aversion, variety-seeking propensity, innovativeness, importance of convenience, and impulsiveness. We adopted some of these measures and adapted others to fit our needs of measuring attitudes toward online shopping. In addition, when no prior measures existed, we developed our own. This study's key variables and the sources of their corresponding measures were the following:

Impulsive shopping. Donthu and Garcia (1999) found that Internet shoppers were more likely to be impulsive shoppers than Internet non-shoppers. The items for this variable measure how likely the respondents are to shop impulsively without much planning.

Receptiveness to advertising. Donthu and Garcia (1999) found that Internet shoppers were more likely to have positive attitudes towards advertising than Internet non-shoppers. The items here measure the respondents' attitude towards advertising in general, asking their perception of whether advertising is deceptive.

Privacy concerns. The items for this variable ask how concerned the respondents are when giving personal information over the Web. Measures were adapted from Korgaonkar and Wolin (1999).

Work productivity. The items for this variable measure the degree to which the Internet is contributing to their productivity at work.

Peer Influence. The items for this variable measure the extent of the influence of a respondent's friends on the respondent's purchase decisions.

Enjoyment of online shopping. The items for this variable measure the extent to which the respondent enjoys shopping online. There are two versions of the items for this measure: a version for online shoppers and the other for non-online shoppers. The non-online shopper version asked the respondents' likely level of enjoyment of shopping online based on what they have heard about it.

Security concerns. Korgaonkar and Wolin (1999) found that "transaction-based security and privacy concerns" significantly correlated with whether the respondents made Web purchases over the past year or not. The items for this variable ask how concerned the respondents are when giving credit card information over the Web. Two versions of the items were developed: one for online shoppers and the other for non-online shoppers. The non-online shopper version asked the respondents' likely level of concern about security if they were to shop online based on what they have heard about it.

Price perception. The items for this variable measure the respondents' perception of prices of items sold online in comparison to those sold in regular stores. Again there are two versions of the items for this measure: a version for online shoppers and the other version for non-online shoppers. The non-online shopper version asked the respondents' perceptions of the values of goods online in comparison to those in regular stores based on what they have heard.

Convenience. The items for this variable measure the perceived level of convenience and ease of shopping online in comparison to shopping in a regular store.

Again there are two versions of the items for this factor. The non-online shopper version asked the respondents' perceived level of convenience and ease of shopping online in comparison to those in a regular store base on what they have heard.

Comparison shopping. The items for this variable measure the perceived degree of availability of information about the product for purchase and the other products in similar category to make comparison-shopping. The non-online shopper version asked the respondents' perceptions of the possibility of making a more informed purchasing decision if they were to shop online based on what they have heard.

Operationalization of Internet usage. The behavioral construct, Internet usage, was operationalized in terms of: 1) the location of Internet access, 2) the access method, 3) the cost of Internet access; 4) the length of Internet experience; 5) satisfaction with the type of Internet connection; 6) the number of email messages sent and received per day; 7) the type of email; 8) the number of Web sessions per day; 9) the average duration of a web session; and 10) frequency of various web activities (e.g., getting financial information, getting weather information, etc.).

Operationalization of online shopping behavior and likelihood of online shopping. The dependent variable, online shopping behavior and likelihood of online shopping, was measured through: 1) whether the respondent has shopped online or not; if they have shopped online, 2) the likelihood of shopping online again in the next six months. To respondents who reported that they had never shopped online, the intention of online shopping was measured through: 1) whether they have ever considered shopping online; and 2) how likely they were to shop online in the next twelve months.

MEASUREMENT ANALYSIS: PRETEST

In order to pretest the instrument for content validity and reliability, a pilot survey was conducted with 79 undergraduate college students. These students were administered an instrument containing 44 multiple item measures that were hypothesized as estimates of 10 key predictors. Using the data obtained from the pilot study, we subjected the multiple item measures to a principal components factor analysis with varimax rotation. This analysis yielded a 10 factor final solution that was overall consistent with the grouping of items as originally hypothesized. The solution accounted for 77% of the variance in the items. We were very cautious in interpreting this measure of fit, as the sample size of the pre-test was limited. We focused on the interpretability of the factors and their consistency with the hypothesized groupings as criteria for accepting the solution. The items that formed each factor were also tested for reliability using Cronbach's Alpha. The procedures for quantitatively pre-testing the content validity and the reliability of the items were very valuable to the researchers. They resulted in identifying problematic and/or weak items. The final version of this study's instrument consisted of the two best items for each of the pretested constructs (see Table 1). The best items were those with the highest faotor loadings on a given construct. Although time consuming and costly, this pre-testing step was well worth the effort since it assisted the research team in anticipated the sources of measurement error before the actual study was ever conducted.

MEASUREMENT ANALYSIS: ACTUAL STUDY

The items were not only analyzed during the pre-test, but also after the data collection period was completed. Here again, the items were subjected to a principal components factor analysis with varimax rotation. This analysis yielded a 10-factor solution accounting for 78% of the variance in the items. The results are reported in Table 1. Cronbach's Alpha was again utilized for testing the reliability of the factors. Table 2 reports the reliabilities corresponding to the factors.

After quantitatively testing for content validity and reliability, the researchers constructed factor scores by adding the items from each factor. These construct scores were utilized in all subsequent analyses.

Table 1

Testing the Items for Content Validity:
Results of Factor Analysis for the Items Used in the Actual Survey

Factor	Item	Factor loading
Impulsive Shopping	○ When I see a product that I want, I buy it immediately.	.805
	○ I'm usually among the first to try new products.	.738
Receptiveness to Advertising	○ Advertising deceives customers.	.863
	○ Advertising makes false claims	.850
Privacy Concerns	○ When I send information about myself to a website, I am concerned that others might have access to it.	.905
	○ When I give information about myself to a website I am concerned that it will be shared with others without my permission.	.913
Work Productivity	○ The Internet helps me do my work more effectively	.896
	○ At work, the Internet helps me get more things done.	.895
Peer Influence	○ I ask my friends advice about what products to buy.	.858
	○ I often buy the same brands that my friends buy.	.697
Enjoyment of Online Shopping	○ I enjoy shopping online (for online shoppers).	.759
	○ I would enjoy shopping online (for non-online shoppers).	.750
	○ Shopping online makes me happy (for online shoppers).	.882
	○ Shopping online would make me happy (for non-online shoppers).	.509
Security Concerns	○ I am comfortable using my credit card for online shopping (for online shoppers).	.861
	○ I would be comfortable using my credit card for online shopping (for non-online shoppers).	.860
	○ It is safe to use my credit card for shopping through a secure website (for online shoppers).	.882
	○ It is safe to use my credit card for shopping through a secure website (for non-online shoppers).	.786

Price Perception	○ I get better bargains by shopping online (for online shoppers).	.691
	○ I would be able to get better bargains by shopping online (for non-online shoppers).	.193*
	○ Products in stores are cheaper than products sold online (for online shoppers).	.894
	○ Products in stores are likely to be cheaper than products sold online (for non-online shoppers).	.952
Convenience	○ Online shopping is more convenient than going to a store (for online shoppers).	.833
	○ Online shopping would be more convenient than going to a store (for non-online shoppers).	.896
Convenience	○ Shopping online is easier than going to a store (for online shoppers).	.861
	○ Shopping online would be easier than going to a store (for non-online shoppers).	.583
Comparison Shopping	○ I get more information about a product I want to purchase by shopping online (online shoppers).	.912
	○ I would get more information about a product I want to purchase by shopping online (non-online shoppers).	.893
	○ When I shop online, I am able to make more informed purchasing decisions (online shoppers).	.897
	○ If I shopped online, I would be able to make more informed purchasing decisions (non-online shoppers).	.847

* This item was not used in subsequent analyses as those who had no prior online shopping experience were not able to reliably respond to it.

Table 2

Factors and Coefficient Alphas

Factor	Cronbach's Alpha
Impulsive Shopping	.42
Receptiveness to Advertising	.57
Privacy Concerns	.77
Work Productivity	.78
Peer Influence	.45
Enjoyment of Online Shopping	.72 (online shoppers) .67 (non-online shoppers)
Security Concerns	.76 (online shoppers) .71 (non-online shoppers)
Price Perception	.52 (online shoppers) .42 (non-online shoppers)
Convenience	.73 (online shoppers) .67 (non-online shoppers)

Comparison Shopping	.85 (online shoppers) .80 (non-online shoppers)

RESULTS

The majority of Internet users in our sample (72%) have between one and five years of experience (*M*=4.2, *SD*=3.0). It is worthy to note that some 13% have been using the Internet for a year or less. When asked where the access the Internet from most often, the majority (61%) cited home while about one third cited work. Although the majority of respondents who access the Internet from home do it through a regular telephone line (73%), the proportion that access it through cable modem (17%) and Digital Subscriber Line (8%) is growing.

The majority of Internet users (73%) have bought a product online at least once with 59% having made an online purchase during the previous month. Among online shoppers, some 56% make between one and two online purchases per month. The large majority of those who shopped online (93%) paid for their last purchase with a credit card and some 91% of online shoppers are likely to shop online again within the next six months.

Our survey results show that in our sample, there are Internet users who have already shopped online and others who have not. We will distinguish between these groups, by labeling the former as Online Shopping Experienced (OSE) and the latter as Not Online Shopping Experienced (NOSE). Accordingly, our analyses will be reported for each of these two groups.

GROUP DIFFERENCES

A series of *t*-tests were computed for investigating the differences between groups with respect to their likelihood to shop online in future for both those respondents who have online shopping experience (OSE) and for those who don't (NOSE).

Among those who have online shopping experience (OSE), when comparing the mean likelihood to shop online between males (M=4.25, SD=1.10) and females (M=4.02, SD=1.22), we find no significant differences (t=1.95, p>.05). Among those who haven't yet shopped online (NOSE), when comparing the mean likelihood to shop online in the future between males (M=1.63, SD=.84) and females (M=1.79, SD=.96), we also find no significant differences (t=1.07, p>.05). Gender does not seem to influence the likelihood to shop online. These results fail to support H1.

However, when making similar mean comparisons among those who have access to the Internet at work (M=4.27, SD=1.12) versus those who do not (M=3.88, SD=1.24), we find that for OSE there is a statistically significant difference between the two groups (t=3.02, p<.01). Those who have access to the Internet from work are more likely to shop online than those who do not. By contrast to those who have online shopping experience (OSE), for NOSE, no significant difference is detected (t=1.37, p>.05) when comparing the likelihood to shop online between those who have access to the Internet from work (M=1.83, SD=.93) and those who don't (M=1.63, SD=.89). For NOSE, having access to the Internet at work does not seem to influence their likelihood to shop online in the future.

With respect to income, a Chi-Square test showed no statistical differences among various income groups with respect to their likelihood to shop online. This fails to support H3.

CORRELATES OF THE LIKELIHOOD TO SHOP ONLINE

Tables 3 shows the pairwise zero-order correlation coefficients that were computed for all the hypothesized predictors and the dependent variable, the likelihood to shop online in future.

The results in Table 3 provide support for the following hypotheses:

H5: The greater the number of hours worked per week by our respondents, the more likely they were to shop online. This was found for OSEs.

H6: The more of an impulsive shopper our respondents were, the more likely they were to shop online. This was found for both OSEs and NOSEs.

H7: The less concerned our respondents were about the security of transacting online, the more likely they were to shop online. This was found for both OSEs and NOSEs.

H8: The more our respondents perceived online shopping to be convenient, the more likely they were to shop online. This was found for both OSEs and NOSEs.

H9: The more our respondents perceived online shopping to be a way to save money, the more likely they were to shop online. This was found for OSEs. Also, the more they perceived online shopping to be more convenient than traditional shopping, the more they were likely to shop online. This was found for both OSEs and NOSEs.

H10: The more positive our respondents' attitude was toward advertising, the more likely they were to shop online. This was found only for OSEs.

H11: The more positive our respondents' attitude was toward shopping online, the more likely they were to shop online. This was found for both OSEs and NOSEs.

H12: The more experienced our respondents were using the Internet, the more likely they were to shop online. This was found for only OSEs.

With respect to H2, the results in Table 3 show a significant but inverse relationship to the one hypothesized. The younger our respondents were, the more likely they were to shop online.

Table 3

Correlates of Likelihood to Shop Online in the Future:
Paired Correlations are reported for both OSE an NOSE.
Corresponding sample sizes are given between parentheses.

Variable	Correlation Coefficients for OSE		Correlation Coefficients for NOSE	
Number of years using the Internet	.17**	(*N*=338)	-.01	(*N*=128)
Average amount of time spent on Internet per day	.01	(*N*=359)	.06	(*N*=153)
Many of my friends shop online	.22**	(*N*=348)	.19*	(*N*=147)
My friends who shop online find it enjoyable	.01	(*N*=331)	.18	(*N*=138)
Average number of hours worked per week	.19**	(*N*=360)	.10	(*N*=151)
Age	-17**	(*N*=356)	-.18*	(*N*=149)
Degree to which respondent is an impulse shopper	.14*	(*N*=279)	.03	(*N*=126)
Degree to which respondent is adverse to advertising	-.13*	(*N*=361)	.08	(*N*=151)
Degree to which respondent is concerned about privacy on the Internet	-.08	(*N*=360)	-.20*	(*N*=150)
Degree to which respondent believes that the Internet contributes to their productivity at work	.23**	(*N*=351)	.15*	(*N*=150)
Degree to which respondent's shopping behavior is influenced by friends	.24**	(*N*=309)	.19*	(*N*=137)
Degree to which respondent enjoys shopping online	.39**	(*N*=360)		
Degree to which respondent believe they would enjoy shopping online			.52**	(*N*=146)
Degree to which respondent is not concerned about security while shopping online	.34**	(*N*=355)		
Degree to which respondent is would be not be concerned about security while shopping online			.43**	(*N*=146)
Degree to which respondent perceives shopping online to be less expensive than traditional shopping	.29**	(*N*=346)		

Degree to which respondent perceives shopping online to be more convenient that traditional shopping	.30**	($N=360$)	.24**	($N=147$)
Degree to which respondent perceives that it is easier to comparison shop online.	.25**	($N=356$)	.24**	($N=146$)

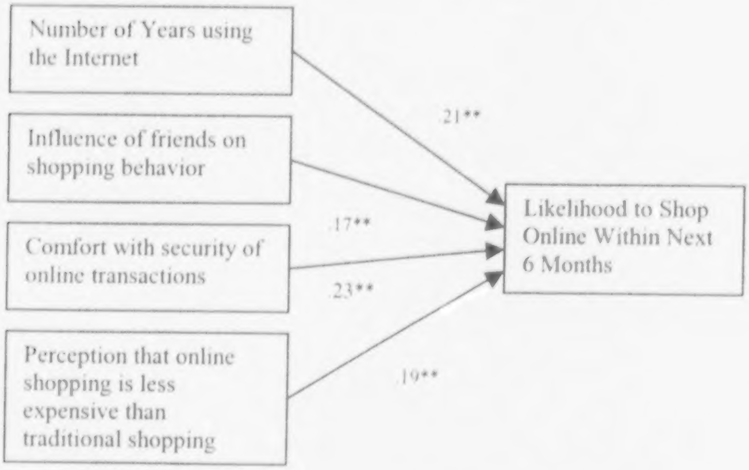
$^{*}p<.05$, $^{**}p<.01$
OSE were asked "How likely are you to shop online again within the next six months?"
NOSE were asked "How likely are you to shop online again within the next twelve months?"

IDENTIFYING THE BEST PREDICTORS OF ONLINE SHOPPING

Here again, we will report our findings for both OSE and NOSE. The variables that were hypothesized to predict a likelihood of shopping online were simultaneously entered in a multiple regression analysis. For OSEs, four of the predictors were found to be statistically significant. The variables that were not found to be significant were removed and the multiple regression analysis was repeated. The four key predictors here account for 20% of the variation in the likelihood to shop online in the future among those who have already done so (Adjusted $R^2 = .20$). Their standardized regression coefficients were small/moderate in strength and positive in direction.

The results in Figure 1 clearly show that, among those with prior online shopping experience (OSE), the more experience they had using the Internet and the more they perceived online transactions to be secure and the more they perceived online shopping to be cost-saving and the more influence their friends had on their shopping behavior, the more likely they are to shop online in the future.

Figure 1:
Predictors of Likelihood to Shop Online Again Within Next 6 Months
Results for those with Online Shopping Experience (OSE)

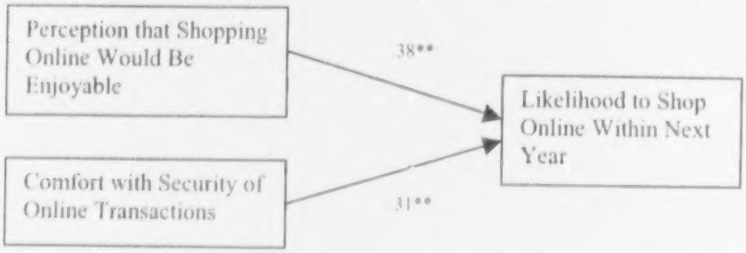

Number of Years using the Internet
Influence of friends on shopping behavior
Comfort with security of online transactions
Perception that online shopping is less expensive than traditional shopping
Likelihood to Shop Online Within Next 6 Months
.21**
.17**
.23**
.19**

$p < .05$ ** $p < .01$
Adjusted $R^2 = .20$

The same analysis was repeated for NOSEs. The variables hypothesized to predict the likelihood to shop online were here also simultaneously entered in a multiple regression analysis. Two of the predictors were found to be statistically significant. The variables that were not found to be significant were removed and the multiple regression analysis was repeated. The two key predictors here account for 34% of the variation in the likelihood to shop online among those who have not yet done so (Adjusted $R^2 = .34$). Their standardized regression coefficients were moderate in strength and positive in direction.

The results in Figure 2 clearly show that, among those with no prior online shopping experience (NOSE), based on their existing beliefs, the more they perceived online shopping to be enjoyable and the more secure they perceived online transactions to be, the more they are likely to shop online in the coming year.

Figure 2
Predictors of Likelihood to Shop Online Again Within the Next Year
Results for those with No Online Shopping Experience (NOSE)


Perception that Shopping Online Would Be Enjoyable
.38**
Likelihood to Shop Online Within Next Year
Comfort with Security of Online Transactions
.31**

p <.05 ** p< .01
Adjusted R^2 = .34

DISCUSSION AND CONCLUSION

By studying the attitudes, behaviors, and demographics of Internet users, this study has identified several types of predictors for the likelihood to shop online.

Beliefs as Predictors:

Our study findings are consistent with those of Donthu and Garcia (1999) with respect to the role of risk in predicting online shopping. We found that the less concerned Web users were about the security of transacting online, the more likely they were to shop online in the future. Our findings concerning convenience are also consistent with those of Jasper and Lan (1992) and Eastlick and Feinberg (1999) even though they were looking at it in the context of traditional catalog shopping whereas we were looking at it in the context of online shopping. The more convenient Web users believed online shopping to be, the more likely they were to shop online in the future. Both of the findings above held true for both OSEs and NOSEs. In addition, for those who had prior online shopping experience, a belief that online shopping saved them money predicted their likelihood to shop online in the future. This last finding is consistent with the results of Korgankar and Wolin (1999) but not of those of Donthu and Garcia (1999).

Attitudes as Predictors:

Consistent with the findings of Sherman, Mathur and Smith (1997), attitude toward shopping on the Web was found to be a predictor of the likelihood to shop online. Note that although Sherman, Mathur and Smith (1997) were analyzing shoppers in traditional brick and mortar stores, the fun factor also holds true for Web mediated shopping. Our findings were also consistent with those of Donthu and Garcia (1999) who had found general shopping impulsiveness to significantly predict actual online shopping. The results above were found in the case of those with prior online shopping experience (OSE) and those without any such experience (NOSE). Positive attitudes toward advertising were also found to predict the likelihood to shop online in the future. This is consistent with another finding reported by Donthu and Garcia (1999) although in our study it was only found among those who already have shopped online.

Behaviors as Predictors:

Our study's findings are consistent with Donthu and Garcia's (1999) with respect to length of Internet experience and its relationship to online shopping. Our study found that the length of one's Internet experience predicts their likelihood to shop online. The number of hours that an individual works was also found to predict this person's likelihood to shop online. This hypothesis was originally inspired from the findings of Evans, Christianson and Gill (1996) although these authors were looking specifically at women. We found that, regardless of gender, the number of work hours predict a likelihood to shop online but only for those with prior online shopping experience (OSE.

Demographic Profile as Predictor:

Unlike Jasper and Lan (1992) who were studying traditional catalog buying behavior and Korgankar and Wolin (1999) who focused on web shopping, our study found that age is inversely correlated with the likelihood to shop online. In our case, the younger the respondent is, the more likely he/she is to shop online in the future. The difference between our results and those of Jasper and Lan (1992) might be attributed to the fact that the Web, as a relatively new technology, is being used by the young more than the old. Whereas the difference between our results and those of Korgankar and Wolin (1999) might be due to the difference in the periods when the studies were conducted. Korgankar and Wolin (1999) most probably conducted theirs in the mid 1990s, a time when the Web was in its infancy and its earliest adopters were those with prior computer work experience who were most probably not young. Our study is conducted in the year 2000, after a large-scale and rapid adoption of the Web by a wider variety of users and age groups.

Our study's findings are also inconsistent with the results of Fisher and Arnold (1994) who had looked at the role of gender in the context of traditional catalog shopping. We found that gender did not predict a respondent's likelihood to shop online in the future. Our study's findings are also inconsistent with the results of Korgankar and Wolin (1999) with respect to income. We found that income did not predict the likelihood to shop online. This last finding might be due to the fact that our study was conducted in Massachusetts where the income is higher than the national average. In addition, it is likely that our sample is more representative of those with a higher income than those in the lowest income brackets. The failure to reject the null hypothesis in our case could be due to a rather homogenous sample with respect to income.

A Profile of the Most Likely Online Shopper:

The profile that emerges from our findings describes the person most likely to shop online. Since this profile is drawn from Massachusetts sample, it describes a person who is living in a more technologically and educationally fortunate environment that the national average. We can, therefore, currently only generalize it to residents of States comparable to Massachusetts along those dimensions. However, since Massachusetts has traditionally led the national trends in technology adoption, we anticipate that this profile will become useful in describing a likely web shopper in any State as Web technology further diffuses across States.

Here are the features of this individual's profile:

i. The Internet is integrated into the person's life. The person has been using it for several years and uses it often, both at home and at work.

ii. The person has positive attitudes about online shopping. They enjoy it or think they would enjoy it, believes it is convenient and saves them money.

iii. The person is not as concerned about the security of online transactions.

iv. The person is influenced by his/her friends when it comes to shopping.

v. In general, this person works more and is younger than average.

We hope that this study will make a solid contribution to the body of literature about online shopping. It certainly is among a very few that have used a Statewide probability sample. We hope that its findings constitute a building block toward better understanding this aspect of communication technology usage.

REFERENCES

AAPOR (2000). Standard definitions: Final dispositions of case codes and outcome rates for surveys. Available online at http://www.aapor.org/ethics/stddef.html.

Alba, J., Lynch, J., Weitz, B. Janiszewski, C., Lutz, R., Sawyer, A., & Wood S. (1997). Interactive home shopping: consumer, retailer, and manufacturer incentives to participate in electronic marketplace. Journal of Marketing, 61, 38-53.

Donthu, N. & Garcia, A. The internet shopper. Journal of Advertising Research. May/June (1999): 52-58.

Eastlick, M. & Feinberg, R. (1999). Shopping motives for mail catalog shopping." Journal of Business Research, 45, 281-290.

Ebenkamp, B. (2001, February 12). Choose your partners: E-tailers face reality. Brandweek, 42(7), 26028.

Evans, K., Christiansen, T., & Gill, J. (1996). The impact of social influence and role expectations on shopping center patronage intentions. Journal of the Academy of Marketing Science, 24(3), 208-218.

Fischer, E., & Arnold, S. (1994). Sex, gender identity, gender role attitudes, and consumer behavior. Psychology and Marketing, 11(2), 163-182.

Hof, R.D. (2001, February 12). Amazon's go-go growth? Gone. Business Week, 3719, 39.

Jasper, C. & Lan, P. (1992) Apparel catalog patronage: demographic, lifestyle and motivational factors. Psychology and Marketing, 9(4), 275-296.

Korgaonkar, P. & Wolin, L. A multivariate analysis of web usage. Journal of Advertising Research. March/April (1999): 53-68.

Lavrakas, P.J. (1993). Telephone Survey Methods: Sampling, Selection and Supervision. Beverly Hills, CA: Sage Publications.

Mandel, M. J., & Hof, R. D. (2001, March 26). Rethinking the Internet. Business Week, 3725, 116-122.

Marketing Research Association. (2000). CMOR tracking system -cooperation, refusal and response rates. [On-line] Available: http://www.mra-net.org/docs/resources/coop_rates/coop_rates_avg.cfm

Rainie, L & Packel D. (2001). More online, doing more: 16 million newcomers gain internet access in the last half of 2000 as women, minorities, and families with modest incomes continue to surge online. *Pew Internet & American Life Project* [On-line]. Available:http://www.pewinternet.org/.

Scott, A. (2001). Online shopping on the rise. The Internal Auditor 58(1).

Sherman E., Mathur, A., & Smith, R (1997). Store environment and consumer purchase behavior: mediating role of consumer emotions. Psychology and Marketing, 14(4), 361-378.